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FARM ACCOUNTING



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TORONTO

FARM ACCOUNTING

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New York

THE MACMILLAN COMPANY

1924

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Set up and electrotyped. Published April, 1924.

Norwood Press
J. S. Cushing Co. — Berwick & Smith Co.
Norwood, Mass., U.S.A.

PREFACE

Importance of Farm Accounts

It is recognized by students of farm management that one of the most important steps that can now be taken in the advancement of farming is a more general adoption of the practice of keeping farm accounts. An effective study of the problems involved in running a farm is possible only when the student is in possession of a fairly complete set of accounts for this particular farm. The farmer must know not only what crops and what animals are most profitable for his type of farm, but he must know also whether his farming business is so managed that each operation is conducted at a comparatively small cost and whether his various enterprises are producing satisfactory results. Correcting errors in farm management such as are revealed by a good set of cost accounts may very easily result in increasing the net yearly income from the farm by several hundred dollars. A progressive farmer in Chautauqua County, New York, reports that the best thing that has happened to him in his experience as a farmer was the imposition of the Federal Income Tax, which compelled him to keep farm accounts, since these enabled him to increase the returns from his farm by several times the amount of the tax. There is no doubt that a few minutes each day (certainly less than ten) spent in entering the necessary daily records, and a few days at the end of the year spent in posting the accounts and studying the information they contain would yield the average farmer a much larger return than he now gets for the same amount of time occupied in ordinary farm work.

Importance of Farm Accounting as a School Study

Every winter a small army of county agents and of extension workers from the agricultural colleges are engaged in teaching groups of farmers how to keep accounts. In many cases bankers, whose business depends in part on the prosperity of the farmers, have joined in this work. It must be confessed that the net results have been meager. The time that a busy farmer can spend learning to keep accounts, even in the comparatively slack winter season, is too short; his attention is too fully occupied with his usual work; and frequently he has arrived at an age and acquired a state of mind which are not conducive to the learning of a new and fairly complicated subject. This need not cause surprise nor be the occasion for discouragement. An attempt to teach any of the standard subjects now studied in our high schools under such conditions would certainly meet with no greater success. It would seem fairly safe to conclude that farm accounting can come into general practice only as the result of its adoption as a regular school subject. To reach the largest possible number of our future farmers it should be placed at the earliest point in the curriculum that is permitted by the maturity of the student. This would seem to be in the earlier years of the high school, for farm accounting is certainly not more difficult than the average subject studied in this period.

Moreover *every* farmer needs to keep a complete set of accounts. This is in striking contrast to the need for commercial accounting on the part of those who enter some business other than farming. Only a small portion of these have practical use for a knowledge of general accounting. In any fairly large business the accounting work is split up into simple operations each of which can be learned in a very short time. In such a concern there may be a score of bookkeepers and only the head accountant may need to know the principles of

accounting. Finally only a very small number of those in general business do any bookkeeping at all except in entering simple forms such as sales slips or order blanks. It would appear therefore that in all high schools except those located in the larger cities there is greater need for a course in farm accounting than for the ordinary commercial accounting which has been so popular.

Purpose of This Book

This book is designed as a text for an introductory course in farm accounting whether this course is given in the high school or in the agricultural colleges. When used in the less mature classes certain parts such as pages 183-200 may be omitted. The material provided for laboratory work presents a sufficient variety to provide for many different local needs. The set of data from Kansas (pages 206-219) represents conditions on a small farm of a type prevalent over large parts of the United States. The set from Iowa (pages 219-238) is typical of the larger farms throughout the corn and wheat belts. The set taken from the Gallatin Valley in Montana contains many elements that are peculiar to the West; while the set from New York State (pages 257-284) is somewhat more complicated and represents conditions on mixed farms with dairying as the main element.

The general principles developed are of course equally applicable to all types of farms, and but little ingenuity will be required of one who has mastered them to apply them to the particular conditions of any farming business with which he may be connected.

Sources of the System Used in This Book

Farm accounting has been practiced in more or less isolated instances for several decades in all parts of the country. Much of this work has been done under the direct supervision

of the agricultural colleges and county farm agents. This has resulted in the gradual adoption of certain practices as being best fitted for their purposes. The authors have endeavored to collect all the available information in this field and to develop a consistent system which should embody all that is best in current practices. Particular effort has been made to achieve the greatest possible simplicity, economy of time required for keeping the accounts, and effectiveness of form in which the information that accounts contain is finally presented. In a subject still in the formative stage, such as farm accounting now is, these objects can be attained only approximately, and improvements may be looked for in the future; but it is believed that the system presented here is adapted to the present needs of the schools and of the practical farmer.

Acknowledgment is due to nearly every agricultural college in the United States. Blank forms and other material were furnished promptly and cheerfully. From many of these colleges long and carefully written letters were received, describing their particular problems and ways in which these are being solved. Particular thanks are due to the Departments of Farm Management of the University of Minnesota, Cornell University, the State College at Manhattan, Kansas, the Agricultural College at Ames, Iowa, and the State College at Bozeman, Montana. From these were received the data for complete cost accounts that are given in this book.

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TABLE OF CONTENTS

PART I	
INVENTORY AND FINANCIAL STATEMENT	PAGE I
PART II	
FINANCIAL ACCOUNTS	43
PART III	
COST ACCOUNTING	73
PART IV	
SPECIAL PROBLEMS AND SPECIAL RECORDS	183
PART V	
LABORATORY WORK IN COST ACCOUNTING	201

FARM ACCOUNTING

PART I

INVENTORY AND FINANCIAL STATEMENT

1. Farming as a business. — Farming is a business in the same sense that buying and selling goods or manufacturing is a business. The farmer invests his money in land and buildings, in machinery and live stock. He determines what crops and what animals to raise, hires farm help, and decides on the general method of operating the farm. Like the merchant or the manufacturer he makes all necessary outlays in the expectation that the value of his products will be sufficient to cover all expenses, including pay for his own work. If there are losses, he bears them; if there are gains, they belong to him. In this respect his situation is fundamentally different from that of the “farm hand,” who gets the agreed wages whether the crops are good or bad. It is this difference that makes the farmer a business man.

2. How much did I make on the farm last year? — To answer this question the farmer must know not only his expenditures and income for the year but also the value of his property on hand, both at the beginning and at the end of the year. A colt has increased in value while an old horse has become less valuable. One building has depreciated while the value of another may have increased because of extensive repairs. The farmer frequently fails to take account of items of this kind and so deceives himself into thinking he has gained or lost when the contrary may really have been the case. Parts I and II of this book deal with the accounts which are necessary to decide the real income from a farm.

3. How can I make the farm pay better next year? —

Last year the farmer raised wheat, oats, corn, and hay; fed cattle and hogs; operated a small dairy; and produced some poultry and eggs. One of the most important questions for him to decide as a business man is whether he shall continue next year to operate his farm on about the same basis as last year or whether he shall increase the production of some items and decrease the production of others. Wise decision of this question may increase his income many hundreds of dollars.

But this question cannot be decided intelligently unless the farmer knows the actual cost of his various farm enterprises and the income derived from them. If corn can be sold at sixty cents a bushel and hogs at eight cents a pound, live weight, does it pay better to sell the corn or to raise hogs and feed it to them? To answer this question the farmer must know the amount of corn required to feed a hog to make it gain a certain amount, the cost of taking care of hogs, etc.

Suppose a farmer can raise 17 bushels of wheat or 45 bushels of corn on one acre. If the wheat is worth \$1.20 a bushel and the corn 65¢, shall he raise wheat or corn?

To answer this question he must know the cost of the extra labor of men and horses required to produce an acre of corn. This makes it necessary to know how much extra labor is required to produce an acre of corn and also the cost of a day's labor. The cost of a day's man labor depends upon the "going wages" of farm labor, the cost of furnishing board, the amount of lost time due to bad weather, etc. The cost of horse labor depends upon the cost of feed, the depreciation of the horses, the amount of work required to take care of them, and the cost of housing them. To furnish information of this kind a system of cost accounts is necessary. Part III of this book deals with cost accounts.

4. Importance of farm accounting. — The keeping of accounts is regarded as indispensable in every business except the smallest and most insignificant, and it is generally agreed among students of farm management that the most important single step in advance that can now be taken in farming is the keeping of farm accounts. It is unquestionably true that a few minutes a day spent by the farmer in keeping accounts, if continued for a number of years, will pay a higher money return per hour than any other work he now does. Under the conditions given in the preceding section it may be found that, with low cost of farm labor, raising corn yields a net return of five dollars per acre more than raising wheat. This would make a difference of two hundred dollars on a forty-acre field. With high cost of farm labor and a lower relative value of corn, it may pay better to raise wheat.

The time required for keeping a set of farm accounts is not great. Ten minutes a day are sufficient to keep the books posted, and a few days in the slack season at the end of the year are all that is necessary to close the books and study the information that they contain. What farmers really need in order to keep accounts, thereby increasing their income very considerably, is to know how to do it. If you ever become a farmer, the time you now spend in learning to keep farm accounts will be paid for at the rate of many dollars per hour.

TOPICS FOR DISCUSSION

1. What property on your home farm increased in value during last year? What property decreased in value?
2. What information must you have in order to determine how much was gained or lost last year in operating your home farm?
3. Discuss the difference in the information and intelligence required, on the one hand, to run a farm as a business proposition and, on the other hand, to work simply as a "hired hand."

5. Farm inventory. — If a farmer is to keep accounts that are at all worth while, he must take an inventory once each year just as any other business man does. The inventory consists of a list showing all items of farm property and the money value of each item. On this and the next two pages we give an inventory of a farm in the Northwest in the exact form in which it was taken. The student should understand that there are many minor variations in the forms of farm inventories. For other forms see pages 24-31.

INVENTORY: FARM MACHINERY

No.	KIND	VALUE AT BEGINNING OF YEAR		BOUGHT DURING YEAR		VALUE AT END OF YEAR	
2	Wagons	\$105	00			\$100	00
1	Buggy	20	00			20	00
2	Sleighs	45	00			40	00
1	Sulky plow	70	00			70	00
1	Gang plow	80	00			80	00
1	Disk harrow	15	00			15	00
1	Spike-tooth harrow . .	30	00			30	00
1	Cultivator	40	00			40	00
1	Corn planter	10	00			10	00
1	Grain binder	140	00			125	00
1	Grain drill	50	00			40	00
1	Mower	25	00			20	00
1	Hayrake	35	00			30	00
1	Header box			\$ 25	00	24	00
1	Header			410	00	400	00
1	Manure spreader . . .	140	00			125	00
1	Fanning mill			48	00	46	00
1	Gas engine	50	00			50	00
8	Work harness	150	00			125	00
1	Light harness	12	00			10	00
1	Cream separator	90	00			80	00
	Small tools	60	00			60	00
Total value							
Increase or decrease ¹							

¹ Draw line through word not wanted.

Work horses and dairy cattle are often listed separately, giving one line to each animal (see page 24). In the list given on this page they are listed in groups. In cases where the cows and horses are of ordinary quality and not exceptionally valuable, listing them in groups may be sufficient, though even in this case listing them separately will furnish much valuable information.

INVENTORY: LIVE STOCK

KIND OF LIVE STOCK	BEGINNING OF YEAR			END OF YEAR		
	Number	Value of Each	Total Value	Number	Value of Each	Total Value
Horses	3	\$125 00	\$375 00	6	\$100 00	\$600 00
Horses	2	100 00	200 00	3	60 00	180 00
Horses	3	65 00	195 00			
Colts	1	90 00	90 00			
Colts	1	60 00	60 00			
Cows	5	80 00	400 00	6	70 00	420 00
Cows	1	60 00	60 00	2	60 00	120 00
Heifers	2	70 00	140 00	2	50 00	100 00
Heifers	1	50 00	50 00			
Steers	3	65 00	195 00	6	40 00	240 00
Steers	2	50 00	100 00			
Calves	6	30 00	180 00	4	30 00	120 00
Calves	1	15 00	15 00	2	20 00	40 00
Bull	1	85 00	85 00	1	90 00	90 00
Brood sow	1	40 00	40 00	1	30 00	30 00
Brood sow	1	30 00	30 00	1	35 00	35 00
Hens	55	1 00	55 00	56	1 00	56 00
Hens	2	1 50	3 00	1	1 50	1 50
Total value						
Increase or decrease ¹						

¹ Draw line through word not wanted.

FARM ACCOUNTING

INVENTORY: GRAINS, FEEDS, AND SUPPLIES

KIND	BEGINNING OF YEAR			END OF YEAR		
	Quantity	Value per Unit	Total Value	Quantity	Value per Unit	Total Value
Spring wheat	300 bu.	\$ 2 00	\$600 00	400 bu.	\$ 3 00	\$1200 00
Oats	275 bu.	70	192 50	90 bu.	90	81 00
Barley	15 bu.	1 25	18 75			
Corn	460 bu.	90	414 00	600 bu.	80	480 00
Buckwheat				35 bu.	2 75	96 25
Straw	10 T.	3 00	30 00	15 T.	4 00	60 00
Wild hay	2 T.	15 00	30 00	2 T.	15 00	30 00
Alfalfa	4½ T.	20 00	90 00	8 T.	20 00	160 00
Other hay	2 T.	15 00	30 00	3 T.	15 00	45 00
Potatoes	60 bu.	60	36 00	20 bu.	1 25	25 00
Other seed	9 bu.	3 00	27 00	6 bu.	5 00	30 00
Mill feeds	½ T.		10 00	½ T.		12 00
Total value						
Increase or decrease ¹						

INVENTORY: REAL ESTATE (FARM LAND AND BUILDINGS)

BEGINNING OF YEAR		END OF YEAR	
Land and Buildings	\$16,400 00	\$16,400 00	

SUMMARY OF INVENTORY

KIND	BEGINNING OF YEAR		END OF YEAR	
Live stock				
Machinery				
Grains, feeds, and supplies . .				
Real estate				
Totals				
Increase or decrease ¹				

¹ Draw line through word not wanted.

EXERCISES

1. In the inventory lists on pages 4, 5, 6, find the total values at the beginning and also at the end of the year.

2. Make out summary of inventory and find net change for the year.

3. In the Inventory Account Book enter the following. Find the totals of all lists and of the summary. For special rulings to be made to adapt the blanks for the various inventory lists see pages 201-5.

Horses and Colts.—Beginning of year: 4 horses @ \$175; 2 horses @ \$125; 1 horse, \$75; 1 horse, \$25; 2 colts @ \$60; 2 colts @ \$45.

End of year: 4 horses @ \$160; 2 horses @ \$110; 1 horse, \$50; 2 horses @ \$100; 2 colts @ \$70; 1 colt, \$50; 1 colt, \$40.

Cattle.—Beginning of year: 4 cows @ \$80; 5 cows @ \$70; 4 cows @ \$50; 3 heifers @ \$50; 2 heifers @ \$35; 7 steers @ \$80; 4 steers @ \$55; 1 calf, \$25; 3 calves @ \$20; 1 bull, \$120.

End of year: 5 cows @ \$75; 2 cows @ \$70; 1 cow, \$65; 6 cows @ \$60; 2 heifers @ \$45; 2 heifers @ \$30; 4 steers @ \$75; 6 steers @ \$55; 2 calves @ \$25; 1 calf, \$20; 1 bull, \$110.

Hogs.—Beginning of year: 2 brood sows @ \$50; 1 brood sow, \$40; 1 boar, \$80.

End of year: 3 brood sows @ \$45; 2 brood sows @ \$35; 1 boar, \$70.

Poultry.—Beginning of year: 74 hens @ 75¢; 266 hens @ \$1.00; 24 roosters @ \$1.50; 7 turkey hens @ \$2.00; 1 gobbler, \$3.50.

End of year: 93 hens @ 65¢; 37 hens @ \$1.00; 9 roosters @ \$1.75; 6 turkey hens @ \$2.50; 1 gobbler, \$4.00.

Implements.—Beginning of year: 1 wagon, \$80; 1 buggy, \$25; 1 gang plow, \$95; 1 disk harrow, \$30; 1 spike-tooth harrow, \$25; 1 cultivator, \$30; 1 grain binder, \$210; 1 seeder, \$45; 1 mower, \$25; 1 hay-rake, \$15; 6 work harness, \$240.

End of year: 1 wagon, \$75; 1 buggy, \$22; 1 walking plow, bought during the year for \$20; 1 gang plow, \$90; 1 disk harrow, \$25; 1 spike-tooth harrow, \$20; 1 cultivator, \$25; 1 grain binder, \$195; 1 seeder, \$45; 1 mower, \$23; 1 hayrake, \$12; 8 work harness, \$275 (2 having been bought during the year for \$80, value at end of year, \$80).

Grains, Feeds, and Supplies.—Beginning of year: wheat, 150 bu. @ \$1.70; hay, 16 tons @ \$21; potatoes, 110 bu. @ 85¢; mill feeds, 1500 lb. at \$20 per ton.

End of year: wheat, 680 bu. @ \$1.50; oats, 230 bu. @ 60¢; hay, 12½ tons @ \$24; hay, 9 tons @ \$18; potatoes, 265 bu. @ 75¢.

Real Estate.—Beginning of year: \$27,600. End of year: \$27,600.

6. Value of farm inventories. — As stated on page 4, every farmer who keeps accounts with his business must take an inventory once each year, for without it useful accounts are practically impossible. But aside from its value as a part of a general set of accounts, a farm inventory has many elements of value in and of itself :

1. In case of loss by fire it is almost indispensable in order to secure complete payment for the loss sustained, for without an inventory it would be very difficult to make a complete list of the articles that are lost.

2. A yearly inventory shows, as nothing else does, the importance of taking good care of farm property. A horse which is worth \$100 in one inventory and \$50 in the next brings home to the farmer the loss that comes from careless handling of horses. A machine left out in the rain and snow may show a depreciation of \$30, which might have been reduced to \$10 by spending an hour or two putting it under shelter and protecting it against rust. A building may depreciate \$100 in one year, whereas, by timely application of work and paint costing \$25, it would depreciate only \$50.

3. Without any other records or accounts the inventory furnishes valuable information which will help the farmer to manage his farm more profitably. The inventory may show one farmer that while he has less money in the bank and more debts than a year ago, the value of his property has increased, so that he has really made money. By showing his banker the inventories at the beginning and end of the year he will be much more likely to obtain the credit necessary to carry on his farm work without making forced sales. The inventory may show another farmer that, though he has more money in the bank and fewer debts than a year ago, he has sold so much of his stock and his other property has so depreciated that he really lost money during the year. This information will be of great value in helping to avoid further loss or real disaster.

TOPICS FOR DISCUSSION

1. A farmer improved his farm in various ways during the year, added to his machinery and live stock, and increased the amount of grains and feeds on hand but has a note at the bank which he cannot pay. Discuss the value to him of accurate inventories, taken at the beginning and end of the year, (a) as affecting his own peace of mind, (b) as affecting his credit at the bank, (c) as affecting his plans for the next year.
2. During the year a farmer has done very little in the way of repairing buildings, has bought no new machinery, and in the fall decides to sell most of his crops instead of feeding them to produce hogs or beef cattle. As a result he has several thousand dollars in the bank. An agent tries to sell him an expensive automobile. Discuss how farm inventories might affect the action of this farmer.
3. A farmer's machine shed is old and not large enough to house all his machinery. In considering whether he should build a new shed, how might inventories help him to make a profitable decision?
4. In case a farmer were to sell his implements and live stock at auction, how would a series of good inventories help him to secure a fair price?
5. Discuss how farm inventories would tend to prevent loss of tools and even larger implements through lending to neighbors or leaving them where they could not be found.
6. Farm machinery always depreciates in value as it grows older. Is this usually taken fully into account by a farmer when he is trying to make up his mind whether or not he has made money by farming during the past year?
7. In what way may farm inventories influence the care which the farmer gives to his live stock?
8. Discuss how inventories would help a farmer collect from an insurance company in case of fire.
9. Enumerate the different kinds of property which should be listed in a farm inventory.
10. Try to make a complete list of the items of property on your home farm and to place a fair value on each item using the principles developed in the preceding pages.

7. Measuring farm products for inventory. — To take inventories of farm products it is necessary to have convenient rules for finding the amount of each kind. The following rules are helpful:

1. One cubic foot of space contains almost exactly .8 of one bushel of small grain. Hence, to find the number of bushels in a bin multiply length by width by average depth of grain, all measured in feet, and the product by .8.

2. To find the number of bushels of ear corn in a bin or crib, multiply the number of cubic feet by .4. To find the number of bushels of potatoes, multiply the number of cubic feet by .6.

3. A ton of hay in a mow or stack varies from 400 to 550 cubic feet, depending upon the kind of hay and the condition of the mow or stack. Clover hay, five months or more in mow or stack, runs about 550 cubic feet to the ton; and timothy hay 450 cubic feet. Straw runs about 625 cubic feet to the ton; and a ton of shredded fodder about 675 cubic feet.

4. To find the number of cubic feet in a rick (stack of hay or of straw) with rectangular base, measure the distance (in feet) over the stack from ground to ground, subtract width of the rick, and divide by 2. Multiply this result by the product of the width and length. To find the number of tons divide the number of cubic feet in the stack by the number of cubic feet in a ton.

To find the number of tons in a round stack the most practical method is to estimate the amount at the time the hay is put up.

5. To find the number of tons of silage in a silo partly fed out proceed as follows: Using the table on page 11, find the number of tons in the silo before any of it was fed. Then find the number of tons in a silo of the same diameter with a depth equal to the original depth minus the present depth.

Subtract the last amount from the first. Thus, if the original depth was 30 feet and the present depth is 12 feet, subtract the silage in a silo 18 feet deep from that in one 30 feet deep.

CAPACITIES OF SILOS

DEPTH OF SILAGE FEET	INSIDE DIAMETER OF SILO					
	10 ft. Tons	12 ft. Tons	14 ft. Tons	16 ft. Tons	18 ft. Tons	20 ft. Tons
10	8	11	16	20	26	33
11	9	13	18	23	30	38
12	11	15	21	27	35	43
13	12	17	24	30	39	49
14	13	19	27	34	44	54
15	15	21	30	38	49	60
16	16	24	33	42	54	66
17	18	26	36	46	59	72
18	20	28	39	50	64	79
19	21	30	42	54	69	85
20	23	33	45	58	74	91
21	24	35	48	62	79	97
22	26	38	51	67	84	104
23	28	40	54	71	90	111
24	30	42	58	75	96	118
25	31	45	61	80	101	125
26	33	48	65	85	107	132
27	35	50	68	89	113	140
28	37	53	72	94	119	147
29	39	56	76	99	125	155
30	41	59	80	104	132	162
31		61	83	109	138	170
32		64	87	114	144	178
33		67	91	119	151	186
34		70	95	124	157	194
35			99	129	164	202
36			103	135	171	211
37			107	140	177	219
38			111	145	184	227
39			116	151	191	236
40			120	156	198	244

SIGHT WORK

1. State a rule for finding the number of cubic feet in an ordinary bin and also the number of bushels of grain in such a bin.
2. State a rule for finding the number of bushels of ear corn in a bin or crib, assuming that the walls of the crib do not flare.
3. State a rule for finding the number of tons of hay in a well-settled mow.
4. State a rule for finding the number of tons of timothy hay in a well-settled mow. Also state such rule for straw and for shredded fodder.
5. State a rule for finding the number of cubic feet in a rick of hay or straw. Discuss this rule. Also state the rule for finding the number of tons of straw and of each kind of hay in such a stack.
6. State the rule for finding the number of tons in a silo that is partly fed out.
7. The original depth of silage in a silo was 36 feet. When the farmer comes to determine how much is left, he finds that the silage is 16 feet deep. Would the amount left be more or less than in a silo filled to the depth of 16 feet in the first place and from which nothing had been removed? Why?
8. A farmer feeds out silage to a depth of six feet in January. If he feeds the same number of tons of silage in March will he feed out a depth of 6 feet? or more? or less? Why?
9. If a corncrib is 8 feet wide at the bottom and 11 feet wide at the top of the corn, how would you find the average width?
10. The rule for finding the number of bushels of grain in a bin is sometimes stated as follows: "Divide the number of cubic feet by 5 and multiply the quotient by 4." How does the result obtained by this rule compare with the rule given on page 10?
11. The rule for finding the number of bushels of ear corn in a bin is sometimes stated: "Divide the number of cubic feet by 5 and multiply the quotient by 2." How does the result thus obtained compare with that obtained by the method given on page 10?
12. A corncrib is 12 feet by 14 feet at the bottom and 14 feet by 16 feet at the top of the corn. What is the average width of the crib? the average length?

NOTE: Multiplying the average width by the average length and this product by the depth of the corn gives a result that is a little too small. If the corn in the crib of Ex. 12 is 8 feet deep, the result will be $10\frac{2}{3}$ cubic feet too small, which is equivalent to about 4 bushels.

EXERCISES

1. Find the amount of wheat in a bin 8 feet by 12 feet if the wheat is $5\frac{1}{2}$ feet deep.
2. Find the amount of corn in a crib 10 feet by 12 feet if the corn is $7\frac{1}{2}$ feet deep.
3. Find the amount of corn in a crib 14 feet long if it is 9 feet wide at the bottom and 11 feet wide at the top of the corn and if the corn averages $7\frac{1}{2}$ feet in depth.
4. Find the number of bushels in a potato bin 14 feet long and 6 feet wide if the potatoes average $4\frac{1}{2}$ feet in depth.
5. A hay mow is 18 feet by 24 feet, and the average depth of the hay is $4\frac{1}{2}$ feet. Find the number of tons of hay, counting 475 cubic feet to the ton.
6. A hayrick measures 32 feet over, is 10 feet wide, and 22 feet long. Find the number of tons of hay in it, counting 450 cubic feet to the ton.
7. Find the number of tons in a hayrick which measures 35 feet over, is 10 feet wide, and $27\frac{1}{2}$ feet long, counting 525 cubic feet to the ton.
8. A silo 12 feet in inside diameter was filled to a depth of 32 feet in the fall. At the time of taking the inventory the silage is 8 feet deep. How many tons of silage are left in this silo?
9. A silo 14 feet in diameter was filled to a depth of 36 feet. At inventory time the depth remaining is 11 feet. Find the number of tons remaining.
10. Find the amount of straw in a rick which measures 37 feet over, is 11 feet wide, and 41 feet long, counting 625 cubic feet to the ton.
11. A silo 16 feet in diameter was originally filled to a depth of 40 feet. At the time of taking the inventory the silage was 13 feet deep. How many tons of silage were left in this silo?
12. In a silo 12 feet in diameter the silage is 34 feet deep. How many tons are there in the first ten feet from the top? Compare the amount in the first 10 feet and in the last 4 feet.
13. Answer questions like those in the preceding for silos of greater diameter than 12 feet. In each case how does the amount in the first 10 feet compare with the amount in the last 4 feet?

8. General principles for valuing real estate. — Real estate includes all farm land together with buildings and other improvements attached to the land, such as fences, wells, and drainage. The best method for valuing real estate is to base it on the selling value of the whole farm, including all improvements. In normal times this value can be determined pretty accurately from sales of similar land in the neighborhood. This method is called the "whole farm" method of valuation.

9. Valuing farm buildings. — In cost accounting it is important to know the value of each separate building. Clearly a building decreases in value each year unless extraordinary improvements are made. The number of years a building will last, hence the rate at which it is wearing out, depends upon the character of the building and the use to which it is put. A brick house used for a dwelling may last fifty years while a frame house may not last more than twenty years.

The following rule for valuing frame buildings has proved satisfactory for most purposes. Each year deduct five per cent of the original cost of the building, less the amount spent for repairs on it. Thus, a building erected at an original cost of \$1000 would be valued at \$955 at the end of the year if \$5 was spent for repairs. If \$10 was spent for repairs the second year, its value at the end of that time would be \$915.

If after a number of years the condition of the building shows plainly that the value found in this way is too high or too low, the value should be adjusted arbitrarily to conform to the best judgment of the farmer.

10. Valuing land. — In cost accounting it is necessary to place a value on each separate piece of land. If pieces of land without any buildings on them have been sold in the neighborhood, this will afford a basis for placing a value on each field. After placing a value on each farm improvement and on each field, it may be necessary to adjust these values by the method shown on the next page.

11. Adjusting values of real estate. — To adjust the values of items of real estate, proceed as follows:

1. Find the total value of the farm as in section 8.
2. Estimate the value of each improvement and each piece of land which it is desired to list separately.
3. Adjust the value of each of these items so that the sum of the adjusted values will equal the value of the whole farm, as in the example below.

EXAMPLE

In this example the "whole farm" value is found to be nearly 90.7% of the total of the estimated or appraised values. Hence the adjusted values are found by taking 90.7 of the appraised values. This is sufficiently accurate though the sum of the adjusted values differs by \$4 from the "whole farm" value.

LAND			APPRAISED VALUE	ADJUSTED VALUE
Fields A and F, tillable land, 80 A.			\$8,000	\$7,256
Field C, tillable land (poor), 20 A.			1,000	907
Fields B and E, permanent pasture, 20 A.			800	726
Farmstead, wood, roads, and lanes, 5 A.			300	272
Farm Improvements	When Erected	Cost		
Dwelling			\$1,500	\$1,361
Tiling			360	327
Fences			280	254
Barn			850	771
Calf shed			50	45
Corncrib			75	68
Henhouse			10	9
Totals			\$13,225	\$11,996
"Whole farm" value				\$12,000

PROJECT

Find the adjusted value of the real estate on your home farm, using the principles and methods just studied.

12. Farm values. — We will now consider the problem of valuing farm products to be listed in the inventory. The general principle is that the *farm value* should be used. By farm value is meant the market value less the cost of marketing. Consider a product such as wheat or beef cattle, which always has a definite market value and which can be sold whenever the owner chooses to do so. The farm value at any time is the market value at that time less the cost of hauling or in other ways delivering the product to the place where it is sold. It is thus seen that the principle used in determining the inventory value of farm products is different from that used in determining the value of ordinary merchandise. In the latter case the expense of selling is comparatively great, and it is not certain that a sale can be made at all at the prevailing price. Such goods are always listed in the inventory much lower than the retail price at which they are offered for sale.

There is some difficulty in basing the valuation of certain farm animals on their market values. Thus it may not be easy to tell how much a certain high-grade dairy cow would bring in the open market, though one can tell very closely how much a twelve-hundred-pound fat steer will bring. There is a similar difficulty in valuing certain types of horses. We now proceed to study the valuation of such animals.

13. Valuing cattle. — The value of beef cattle is found by weighing them and multiplying by the market value, deducting, of course, any possible cost of marketing. In case no scales are available, the weight can be estimated quite closely by the experienced farmer.

Calves are listed by age groups (see section 22) and their values estimated.

The valuing of dairy cattle is more complicated. It is true that the farm value is to be used as a basis, but this leaves considerable room for estimating the exact value to be used.

In fixing this value, certain general principles are useful. The dairy cow reaches her full milk-producing power at about five years of age. It has been found that in well-conducted dairy herds, cows, after reaching maturity (five years of age), average about four and one-half years in the herd, after which they are sold as beef.

Both the rate and the amount of depreciation depend upon the value of the cow and the beef value. Assuming a beef value of \$60, the following table is not far from correct:

VALUE OF COW AT FIVE YEARS	YEARLY DEPRECIATION	
\$ 70	4%	\$ 2.80
100	8%	8.00
200	12%	24.00
300	13%	39.00
400	14%	56.00

There is a general tendency to place too high values on old dairy cows, especially if they were very valuable in their prime. Young stock (both heifers and bulls) intended for the dairy should be valued separately (not with the calves), if they are of particularly valuable breed.

SIGHT WORK

1. A farmer estimates that one of his cows is worth \$200. Can this be verified by consulting market values?
2. A cow worth \$150 in her prime is finally sold for \$60 as beef. What is her yearly depreciation if kept five years in the herd?
3. Assuming \$60 as the beef value of a cow, what is her yearly depreciation if she was worth \$200 in her prime and if she is kept six years in the herd?

PROJECT

Find the value of the cattle on your home farm, using the principles stated on these pages.

14. Valuation of horses and other farm animals. — The work horse reaches his prime value at five or six years of age and remains at this value until eight or nine. Some farm economists say that a nine-year-old horse should pay for himself in seven years. Hence the yearly depreciation of a horse above nine years should be one seventh of his prime value. The inventories in this book are to be worked out according to this plan.

Hogs should be weighed and their value found from market quotations in the same manner that the value of beef cattle is found. Boars and breeding sows should be valued separately; and young pigs should be valued in groups, the same as calves.

The depreciation of hens depends upon their value as pullets, their meat value when killed, and the length of time they are kept. Thus, a hen depreciates 60¢ per year if she is worth \$1 as a pullet and 40¢ when killed and if she is kept one year in the flock. If kept two years, she depreciates 30¢ per year.

It may be objected that the market value of all animals should determine their inventory value and that no tables of depreciation are needed. It is quite true that such tables should be used only as a general guide, the final determination of the value being made by considering market values together with the probable remaining usefulness of the animal; but it is also true that the farmer who uses these tables of depreciation is far less likely to go wrong than the one who does not use them and that such tables tend to prevent overvaluing old animals, thus throwing an undue depreciation near the end of their useful lives. The tables of depreciation are a real help in fixing, for instance, the value of a twelve-year-old horse or a nine-year-old cow.

Farmers not infrequently fail to realize fully the reason why an old horse is of no value. There is a tendency to feel that he is of some value as long as he can work, even if he is not as effective as he was in his prime. What is not realized

is that the slowing up of one horse slows up a whole team, a man, and an implement. The good horse pays for his feed, care, interest on the investment, and depreciation. A relatively small slowing up will be sufficient to wipe out the margin which pays interest and depreciation and to begin to encroach upon the feed and care cost. As soon as that begins to be the case, the horse is of no value and, if not disposed of, is kept at a financial loss.

Similar considerations apply to the keeping of old dairy cows. Suppose a farmer having a high-grade dairy herd is considering whether to keep cows five or six years in the herd after they reach their prime. Suppose they average \$200 in value at their prime and \$60 when finally sold for beef. If kept in the herd six years, the yearly depreciation will be \$140 divided by six, or \$23.33, and if kept five years, it will be \$140 divided by five, or \$28. The difference is \$4.67. The question then is: Will the average net profit from each cow be increased \$4.67 by disposing of the old cows one year earlier and replacing them with cows in their prime? For the purpose of this question the depreciation must not be included in finding the net profit.

SIGHT WORK

1. A work horse worth \$200 in his prime is now twelve years old. What is his value, using the method described on page 18?
2. What is the yearly depreciation of a hen, worth 60¢ when killed and \$2.50 as a pullet, if kept two years in the flock?
3. Consider under what conditions it might pay to keep one old and inefficient team on a farm.
4. How would you decide whether it would pay better to keep a hen one or two years in the flock?

PROJECT

Find the value of each horse on your home farm, using the method described on page 18. Also find the values of colts, hogs, and chickens.

15. Valuing farm implements and other equipment. —

Every farm implement and every other item of equipment wears and deteriorates with time and use. No matter how well a wagon or a grain binder is cared for and no matter how well it is kept in repair, there comes a time when it no longer pays to make further repairs and the machine must go on the scrap heap. The simplest method for finding the depreciation of farm machinery is to deduct each year a certain per cent of its original cost. The first step is to estimate the life of the machine and then to compute the rate per cent of yearly depreciation. Thus, if the life of a machine is estimated as 10 years, the yearly depreciation is 10% of its original cost; and if the estimated life of the machine is 15 years, the yearly depreciation is $6\frac{2}{3}\%$ of the original cost. This is the method used in this book.

The following table of average life of farm machines is taken from *United States Farmers' Bulletin* 757. For a different table see *Bulletin* 1182.

IMPLEMENT	LIFE IN YEARS	IMPLEMENT	LIFE IN YEARS
Gang plow	13	Corn binder	10
Disk harrow	12	Corn planter	16
Drag harrow	9	Sulky cultivator	12
Roller and packer	19	Wagon	18
Grain drill	11	Grain tank	11
Grain binder	10	Wagon rack	6
Mowing machine	12	Bobsled	15
Hayrake	13	Gas engine	13
Manure spreader	12	Harness	11

Since the actual life of a machine depends largely upon the amount of use to which it is put and the care given to it, any such table must be regarded as only a very general guide, to be changed according to local conditions and so as to conform to the farmer's best judgment.

16. Valuing grains, feeds, and farm supplies. — The inventory value of grains and feeds should be their farm value (see section 12) at the time the inventory is taken. The inventory value of supplies that have been purchased should be their farm value at the time of taking inventory. Thus, the inventory value of purchased ground feed should be the market value plus the cost of hauling it to the farm.

All farm products shrink in storage. If the farm inventory is taken March 1, the following shrinkages, calculated on the amount stored, are about right: corn, 8% ; wheat, oats, barley, rye, if kept in good bins on farms, about 2% ; hay, 10% to 15% (in "sweating"); potatoes, 10%.

17. Inventory value of seasonal work. — Work done in the summer and fall on crops which are not harvested the same year creates a value which should be shown in the inventory. Thus, fall wheat should be entered in the inventory at a value equal to that of the seed and the cost of the labor. Similar remarks apply to all crops sown in the fall, to fall plowing, and to any other work done on next year's crops.

There is a special difficulty in valuing seasonal work on such semiperennial crops as fields seeded to hay or alfalfa. It is clear that the total cost of the work and seed necessary to seed the field should be carried in the first year's inventory. The most convenient method for determining how much should be carried over to succeeding inventories is to estimate the number of years the crop will run and divide the total cost by this number. The amount carried over is then decreased yearly by this amount.

PROJECTS

1. Make a list showing present value of all implements on your home farm.
2. Make a list with present values of all feeds, grains, and supplies on your home farm.

18. Inventory value of manure. — The value of the barnyard manure produced by an animal varies greatly with the conditions of feeding (such as long or short season), the care that is taken of the manure, and its value when applied to the land. The amount of manure produced by farm animals, except poultry and hogs, is estimated by Warren at 1 ton per month per 1000 pounds of animals fed. Thus a 1000-pound cow will produce 1 ton per month as will also 1000 pounds of sheep or horses. It is estimated that under average conditions barnyard manure is worth about \$3 a ton. Sometimes this estimate runs as high as \$6 or even higher, and in some cases it is regarded as of no value. The actual valuation in any one case must depend on local conditions, and no hard-and-fast rule can be laid down.

Manure in the field, which was hauled in the fall, so that none of its value has gone into crops, should be carried in the inventory at its total *field value*. (Field value equals the barnyard value plus cost of hauling and spreading.) It is estimated that usually 40% of the value of the manure goes into the crop the first year, 30% the second year, 20% the third, and 10% the fourth. Hence, 60% of the field value of the manure should be carried in the inventory after the first crop, 30% after the second crop, and 10% after the third. However, this rule may need to be modified in special cases, since the percentage of the manure that is used by successive crops varies somewhat with the character of the soil and also with the character of the crop.

In case manure is applied yearly, as to orchards or berry patches, no part of the manure so applied should be carried in the inventory.

Summer fallow may also produce an inventory value, but this is not of great importance and may be neglected in an elementary course. Moreover it is difficult to determine how much of its value to put in the inventory each year.

19. Inventory value of orchards and standing timber. —

For reasons which will appear later, standing timber and orchards, when of considerable value, should be listed separately in the inventory. This is particularly important in the case of timber which is growing rapidly and hence increasing in value or in case of timber that is being cut down and consequently decreasing in value. Where a wood lot is kept so that the growth just about equals the amount taken out, there is no need of a separate entry in the inventory. Similarly, there is no need of a separate inventory entry of a small orchard that is maintained at about the same value from year to year. If the orchard is increasing in value because of growing trees or decreasing in value because the trees are getting old, separate lists should be kept (see section 98).

20. Depreciation of land. — One element which we have not yet considered is the depreciation of the land due to protracted cropping without proper restoration of fertility to the soil. A man may start with a \$20,000 farm; cut and sell hay from it, so as to make for ten years \$1000 net each year above all expenses including the value of his own labor; and at the end he may have a \$10,000 farm. Quite likely he believed he was making \$1000 each year as return for his business enterprise and management, whereas, as a matter of fact, he did not make a cent.

The inventory should show the decreased value of land due to reduced fertility or what is called "run down" conditions. The amount which it would cost to get the land into "kept up" condition should be deducted from the general value of land of equal natural grade in the neighborhood.

It should be borne in mind, however, that by proper rotation of crops and the application of fertilizer, it is possible to maintain the fertility of most soils practically indefinitely. Decrease in the fertility of land is an indication of bad farming rather than a necessary consequence of the use of the soil.

21. Listing dairy cattle and work horses. -- Dairy cattle and work horses should be entered in a separate list (compare page 5) of the form shown on this page and the next. The animals should usually be entered individually, either by name or number — care being taken that no name or number is duplicated in the same list. Heifers should be entered in the Dairy Cattle list when coming fresh the first time, and young bulls should be entered on the same list when definitely set aside for breeding purposes. Young horses should be entered on the list of Work Horses when they are broken to harness or saddle.

The form of record shown here provides inventories extending over a number of years. This has the advantage that each name or number is written only once and the values entered in previous inventories may be inspected without further trouble. In case of sale, slaughter, or death, this should be recorded on the same line after the rest of the record.

When starting such a record, the farmer may either endeavor to fill in the blanks for the whole history of each animal already on the farm, or he may work into it gradually, starting with the present value of those now on hand and entering a more complete record of each new animal as it is added to the list. It may be well to list the bull at the bottom of the page, so as to leave room for the addition of cows without including the bull among them.

INVENTORY :

NAME OR NUMBER	DATE BORN OR PURCHASED	DESCRIPTION	COST IF PURCHASED		AGE IF PURCHASED
Mollie	Born 4-27-17	$\frac{3}{4}$ Holstein	\$300	00	5 years
Spot	Born 1-14-18	$\frac{1}{2}$ Holstein			
Daisy	Bought 8-6-19	Pure-bred Holstein			
Mabel	Born 5-8-20	$\frac{7}{8}$ Holstein			
Lucille	Born 8-14-20	$\frac{1}{2}$ Holstein			

EXERCISES

1. In the Inventory Account Book enter the following list of dairy cows. The date of birth or purchase and the value of each animal for each year are given. In this exercise the cows are numbered instead of named. See pages 201-5 for special rulings.

#1: born 4-9-18, $\frac{1}{2}$ Jersey; 1921, \$85; 1922, \$100; 1923, \$110; 1924, \$100; sold 4-8-24 for \$95.

#2: born 9-2-18, $\frac{3}{4}$ Jersey; 1922, \$90; 1923, \$110; 1924, \$110.

#3: born 9-16-18, common stock; 1922, \$55; 1923, \$65; 1924, \$60.

#4: born 1-7-19, $\frac{3}{4}$ Jersey; 1922, \$90; 1923, \$120; 1924, \$115.

#5: bought 5-7-22 for \$250, pure-bred Jersey, four years old; 1923, \$300; 1924, \$270.

#6: born 4-12-19, $\frac{7}{8}$ Jersey; 1922, \$100; 1923, \$140; 1924, \$160; sold 6-3-24 for \$175.

2. In the Inventory Account Book enter the following list of work horses:

Jack: bought 1916 for \$180, six years old when bought: 1920, \$160; 1921, \$135; 1922, \$110; 1923, \$85; 1924, \$60.

Queen: born 8-7-14; 1920, \$225; 1921, \$225; 1922, \$225; sold 4-3-22 for \$215.

Bess: born 3-6-15; 1920, \$180; 1921, \$200; 1922, \$200; 1923, \$200; 1924, \$180.

Sam: bought 11-9-19 for \$140, three years old; 1920, \$150; 1921, \$160; 1922, \$160; died from colic 5-2-22.

Maude: born 4-30-16; 1920, \$125; 1921, \$150; 1922, \$140; sold 2-7-23 for \$145.

3. In the Inventory Account Book make a list of the dairy cows on your home farm, putting in all the data about each one that you can find.

DAIRY CATTLE

VALUE MARCH 1 EACH YEAR					
1920	1921	1922	1923	1924	1925
\$ 80 00	\$120 00	\$150 00	\$135 00	\$120 00	\$105 00
	70 00	90 00	120 00	Sold 9-6-23 for	110
260 00	220 00	180 00	140 00	100 00	60 00
			80 00	130 00	180 00
				70 00	95 00

22. Listing farm animals entered by groups. — Under this head should be listed all calves, young stock, beef cattle not kept for breeding (beef cattle kept for breeding should be listed individually the same as dairy cattle), colts, hogs, poultry, bees, etc. Each of these may be divided into separate groups as shown in the list given below.

A space of two or three lines should be left open after the group of cattle, for instance, as shown below, so that one or more extra items may be entered in case there should be need to do so. For the same reason such a space should be left open after the groups of horses, after the groups of pigs, etc. In the main the different groups will remain unchanged from year to year, the number and total value of the animals in each group being entered as each inventory is taken. If possible, hogs and beef cattle should be weighed (in groups) and the farm values determined accordingly.

INVENTORY: ANIMALS LISTED BY GROUPS

KIND	MARCH 1, 1922			MARCH 1, 1923		
	Quantity	Value per Unit	Total Value	Quantity	Value per Unit	Total Value
Calves	4	10	\$ 40 00	6	10	\$ 60 00
Yearlings	8	35	280 00	9	30	270 00
Steers	12480#	08½	1060 80	14960#	08	1196 80
Heifers	6	45	270 00	7	40	280 00
Young colts . . .	1		50 00	2		90 00
One-year-olds . .	2	75	150 00	1		80 00
Two-year-olds . .				1		100 00
Horses	1		140 00			
Brood sows . . .	3	40	120 00	4	40	160 00
Boars	1		60 00	1		70 00
Shoats	3460#	11	380 60	5830#	10	583 00
Pigs	10	8	80 00	14	8	120 00
Hens	74	75	55 50	96	75	72 00
Roosters	5		5 00	7		7 00

23. Listing grains, feeds, and supplies. — The items to be included under this head should include all grains and feeds raised on the farm or purchased, whether kept for sale or for use on the farm. Potatoes if kept for sale or seed should also be included. Potatoes or any other farm product that has been definitely set aside for the use of the family should not be included. Such items as lubricating oil, twine, and medicines for animals should be included, as should also spare parts of machines, such as plowshares, bolts, etc. The number of different kinds of articles will not be very great and may be entered from year to year in the form shown below.

INVENTORY: GRAINS, FEEDS, SUPPLIES

ARTICLE	MARCH 1, 1922			MARCH 1, 1923		
	Amount	Value per Unit	Total Value	Amount	Value per Unit	Total Value
Wheat	360 bu.	1 40	\$ 504 00	850 bu.	1 25	\$1062 50
Oats	680 bu.	60	408 00	720 bu.	55	396 00
Corn in crib . .	1230 bu.	85	1045 50	940 bu.	80	752 00
Clover hay . . .	46 T.	12 50	575 00	38 T.	13 00	494 00
Timothy	29 T.	14 00	406 00	48 T.	15 00	720 00
Ground feed . .	4.60 cwt.	3 60	16 56	12.80 cwt.	3 40	43 52
Gasoline	38 gal.	27	10 26	18 gal.	24	4 32
Lubricating oil	14 gal.	90	12 60	23 gal.	80	18 40
Spare parts . . .			8 60			5 40

EXERCISES

1. In the Inventory Account Book list the following items:

1922: wheat, 150 bu. @ \$1.40; oats, 630 bu. @ 65¢; potatoes, 390 bu. @ 95¢; hay, 97 T. @ \$17.50; straw, 27 T. @ \$4.00; ground feed, 17.40 cwt. @ \$3.90; lubricating oil, 17 gal. @ 85¢; twine, 23 lb. @ 17¢; posts, 163 @ 24¢; wire, 200 lb. @ 7¢; paint, 6 gal. @ \$3.50.

1923: wheat, 820 bu. @ \$1.55; oats, 925 bu. @ 70¢; hay, 107 T. @ \$16.00; straw, 31 T. @ \$3.50; ground feed, 12.90 cwt. @ \$3.65; cow beets, 14 T. @ \$3.50; corn in crib, 670 bu. @ 93¢; fence wire, 180 lb. @ 6½¢.

2. In the Inventory Account Book enter list of grains, feeds, and supplies on your home farm.

24. Listing farm machinery. — For the purpose of listing it is most convenient to divide all farm implements into machinery and tools. Under Machinery should be listed all machines which are entered individually. To illustrate: When a farmer buys a mowing machine, he should enter it at once in his inventory, giving description, date of purchase, and farm cost. This mower will then remain on the inventory as a separately listed item until it is worn out, sold, or otherwise disposed of. The farmer may own several mowers at the same time, but each is listed and described separately, as is this one. Pitchforks, on the other hand, should be entered in the list of Tools, not separately but as so many pitchforks (see section 25).

The farm value, that is, the purchase price plus the cost of buying the machine, bringing it to the farm, and setting it up, should be used. Thus, if a binder is bought for \$250, it may cost \$260 by the time it is in the machine shed. The remarks made in section 14 about the tendency to overvalue old farm animals apply to the valuing of farm machinery also. The yearly depreciation suggested in section 15 should be adhered to until it becomes apparent that the life of the machine will be shorter or longer than that given there.

INVENTORY:

ARTICLE	DESCRIPTION	DATE OF PURCHASE	FARM COST	EXPECTED LIFE	YEARLY DEPREC.
Wagon	Moline, heavy, wide tire	4-17-20	\$ 96 50	18	\$ 5 00
Binder	Deering, 6-ft. cut	6-23-20	274 00	10	27 00
Gang plow .	John Deere, 14"	8-6-20	137 00	13	11 00
Anvil	Peter Wright, #115	10-14-20	19 50		
Harrow . . .	Twelve-foot spike-tooth	4-2-21	32 50	9	4 00
Corn planter	McCormick, single row	4-29-21	103 50	16	6 50
Harness . . .	One set, heavy	5-18-21	96 25	11	9 00
Cultivator .	United Harvester, Sulky	6-23-21	51 50	12	4 00

EXERCISES

1. In the Inventory Account Book enter the following in the form shown on pages 28 and 29, using the table of section 15 to determine yearly depreciation, unless otherwise specified.

- 1 Studebaker wagon, narrow tires, bought 9-3-19, farm cost \$114.50.
- 1 Oliver gang plow, 14-inch cuts, bought 3-26-19, farm cost \$131.60, inventory values: 1920, \$120; 1921, \$105; 1922, \$100; 1923, \$95; 1924, \$85.
- 1 Deering grain binder, 6-foot cut, bought 7-2-20, farm cost \$258.
- 1 Ideal 10-foot disk harrow, bought 8-16-20, farm cost \$89.75.
- 1 Champion single-row corn planter, bought 4-2-21, farm cost \$97, sold 4-5-23 for \$50.
- 1 Wood manure spreader, bought 4-12-21, farm cost \$249.60.
- 1 fanning mill, bought 4-12-21, farm cost \$57.50.
- 1 Oliver #1 improved cultivator, bought 6-12-21, farm cost \$71.50.
- 1 International 3 H. P. gas engine, bought 7-18-21, farm cost \$162.
- 1 pair heavy harness, bought 7-18-21, farm cost \$72.
- 1 Meker light wagon, bought 7-18-21, farm cost \$62.50.
- 1 McCormick 2-section harrow, bought 8-18-21, farm cost \$37.50.
- 1 Sharples #3 cream separator, bought 2-26-21, farm cost \$96.50.

2. In the Inventory Account Book make a list of all large machinery on your home farm, putting in all the information that you can about each one. In case you know the year in which each machine was bought use the table on page 20 to determine the present value. If the machine is not in the table use your own judgment.

FARM MACHINERY

VALUE MARCH 1 EACH YEAR				
1920	1921	1922	1923	1924
	\$ 91.00	\$ 86.00	\$ 80.00	\$ 75.00
	250.00	220.00	195.00	170.00
	125.00	115.00	105.00	100.00
	19.50	19.50	19.00	19.00
		28.00	24.00	20.00
		100.00	95.00	85.00
		90.00	80.00	75.00
		48.00	45.00	40.00

25. Listing tools. — Small tools, such as pitchforks, spades, hammers, currycombs, etc., should be listed in groups, giving the estimated value of each group. Thus we may have seven pitchforks valued at \$2.75, three hammers valued at \$1.80. Under this head should be included all farm implements and tools of every description not listed separately under Farm Machinery (see section 24). Household utensils should not be included nor any of the items entered under Supplies (see section 23).

The farmer should keep a separate memorandum of tools purchased in which to enter each one as it is bought, together with its cost. At the time of taking the inventory he notes, for example, that at the time of the last inventory he had five pitchforks, and from his memorandum of tools purchased during the year he finds that he has bought three since that time. He finds, however, that he has only seven on hand and remembers that one was broken. So he lists seven forks in his new inventory.

EXERCISE

In the Inventory Account Book list all small tools on your home farm.

INVENTORY: SMALL TOOLS

ARTICLE	1921		1922		1923		1924	
	No.	Value	No.	Value	No.	Value	No.	Value
Spades	3	\$2 00	3	\$1 50	4	\$2 50	3	\$2 00
Shovels	1	1 50	1	1 25	1	1 00	2	2 50
Pitchforks . . .	9	5 50	8	5 00	10	6 00	9	5 50
Manure forks . .	2	2 00	2	1 50	3	3 50	2	2 00
Hammers . . .	4	2 40	3	2 00	3	1 50	3	2 00
Saws	2	3 00	2	2 50	2	3 00	3	4 00
Pruning hooks .	2	4 00	2	3 50	2	3 50	1	2 00
Pincers	2	1 50	2	1 50	1	1 00	2	1 75
Milk pails . . .	6	4 00	7	4 50	7	4 00	8	6 00
Hoes	3	2 00	2	1 50	4	3 00	3	2 50
Axes	2	3 00	2	2 00	2	3 00	1	2 00

26. Listing seasonal work for inventory. — In this list should be entered all seasonal work (see section 17), all manure in the field (see section 18), and summer fallow, in case this is listed. In order to obtain data for this list it is necessary to make a record of all the work done on crops which are not harvested before the next inventory, of all seeds used for such crops, and of all manure hauled into the field since the last inventory.

If a field is seeded in hay such as clover, timothy, or alfalfa, this work is inventoried the first year at the total cost. To find the inventory value for any succeeding year, deduct from the inventory value of the year preceding the quotient of the total cost divided by the number of years the crop is expected to run. Thus in the alfalfa field entered in the list below, the total cost is \$120, and the crop is expected to run five years. The inventory value the first year is \$120. For each succeeding year deduct \$24 from the inventory value of the preceding year.

In case the inventory is to be used in a system of cost accounting the seasonal work on each field should be listed separately, as is done in the list given below.

INVENTORY: SEASONAL WORK

WORK OR MATERIAL WORK	FIELD	YEAR	1922		1923		1924	
			INVENTORY VALUE	VALUE USED	INVENTORY VALUE	VALUE USED	INVENTORY VALUE	
Fall work	C	1921	\$48 60	\$48 60				
Fall work	A	1921	57 30	57 30				
Seed wheat . .	A	1921	52 00	52 00				
Manure	B	1921	150 00	60 00	\$90 00	\$45 00	\$45 00	
Alfalfa seeding	D	1921	120 00	24 00	96 00	24 00	72 00	
Fall work	C	1922			63 50	63 50		
Clover seeding	E	1922			55 00	11 00	44 00	
Fall work	B	1922			83 50	83 50		
Manure	A	1922			120 00	48 00	72 00	

27. Listing real estate. — The method of valuing real estate has already been discussed (see sections 8–11). The process must be repeated at the taking of each inventory. In case the value of improvements is diminished, due to normal depreciation and lack of replacements, the question should be seriously considered whether the total value of the farm is decreasing. It may be, of course, that an upward trend of farm values will be sufficient to maintain the value of the farm under such conditions or even to increase it. Normally, any considerable special expenditure on farm improvements should increase the “whole farm” value. If it does not, such expenditure will show as a loss in the farm accounts.

28. What should be included in the farm inventory. — By common business usage the inventory of any business consists of a list of all *material* property of that business. It does not include such nonmaterial properties as debts due to the business, nor does it include any property of the owner of the business which is not used directly in that business. It does not include, for instance, the farmer’s household articles nor his automobile, unless that is used in the farm business; nor does it include such property as stocks or bonds which the farmer may own. The financial statement (see section 32) serves a different purpose and contains all of these.

In some systems of farm accounting the inventory is made to contain all the items usually included in the financial statement. There seems to be good reason why this should not be done, inasmuch as the financial statement serves all the purposes that could be served by such an inventory.

29. Directions for taking inventory. — The first step in taking an inventory is to decide just what lists are to be kept. This will depend upon the character and the magnitude of the business but will in most cases follow more or less closely the outline given in sections 21–27. This once decided, each list should be worked up separately, one at a time,

The Implement and the Small Tool lists will be found most laborious. The farmer should go through each building making a careful preliminary list of every item of this kind of property with its estimated value. When this has been done, these items should be grouped and entered into the Small Tool list, as shown in section 25, or separately in the Implement list.

After the first inventory is taken, the subsequent ones are much less laborious. From his general knowledge of the condition of his property the farmer will be able to fill in much of the inventory sitting at his desk, without even looking at the items whose values he is putting down.

In every case the farmer should make certain of the location and condition of every item that goes into the inventory. If the last inventory showed six pitchforks and if he has bought two since that time, all eight should be accounted for. If there are only seven on the farm now, the fate of the remaining one should be known. In the long run this will save much by preventing unnecessary loss through many causes.

30. Inventory summary.—After finishing all separate lists of farm property, the total value of each should be found and a summary made in the following form:

INVENTORY SUMMARY

LIST	1921	1922	1923	1924
Real Estate	\$35,000 00	\$35,000 00	\$37,500 00	\$37,000 00
Dairy Cattle	2,480 00	2,760 00	2,530 00	3,100 00
Draft Horses	1,450 00	1,500 00	1,560 00	1,620 00
Animals Entered in Groups	2,730 00	3,590 00	2,270 00	2,980 00
Farm Machinery	1,760 50	2,130 75	2,040 00	2,390 25
Grains, Feeds, and Supplies	2,485 60	1,037 40	3,027 00	1,040 30
Small Tools	540 50	553 80	587 60	574 20
Seasonal Work	824 50	793 70	867 80	964 50
Orchard and Standing Timber . . .	950 00	1,100 00	1,250 00	1,300 00
Totals				

INVENTORIES TO BE POSTED

Following is material for two inventories for the same farm, one at the beginning of the year and the other at the end of it. Two values are given for articles which are kept from year to year and which are entered individually. Thus we have "1 grain binder, \$180, \$160," which means that this machine was worth \$180 at the beginning of the year and \$160 at the end. In case an article was bought during the year only one value is given. Thus, "1 mower, bought 7-18-22, \$85," means that the mower was bought on the eighteenth of July of the current year (1922) and that the farm cost of the mower was \$85. Two complete sets of data are given for such articles as grain, seed, hay, and animals entered in groups.

These inventories should be entered in the Inventory Account Book, and should bear the dates of March 1, 1922 and 1923.

Dairy Stock, Horses, and Machinery require two pages each, while one page is sufficient for each of the following: Animals Listed by Groups, Small Tools, Supplies, Seasonal Work, Real Estate, and Summary.

Dairy Stock. — Bessie, born 8-6-16, common stock, \$80, \$75; Beauty, born 5-4-17, common stock, \$85, \$75; Daisy, born 5-19-17, common stock, \$60, \$60; Rose, born 6-21-17, common stock, \$55, \$60; Nancy, born 3-7-18, common stock, \$80, \$85; Dorky, born 3-13-18, common stock, \$45, \$50; Roany, born 5-3-18, $\frac{1}{2}$ Holstein, \$125, \$150; Lilly, born 5-29-18, common stock, \$60, \$70; Star, born 6-1-18, $\frac{1}{2}$ Holstein, \$120, \$140; Maude, born 6-6-18, $\frac{1}{2}$ Holstein, \$100, sold 9-10-22 for \$120; Helen, born 7-2-18, $\frac{1}{2}$ Holstein, \$100, \$120; Babe, bought 4-5-20, pure-bred Holstein, price \$200, age 4 years, \$250, \$220; Sissy, born, 2-27-19, $\frac{1}{2}$ Holstein, \$85, \$95; Betty, $\frac{3}{4}$ Holstein, bought 1-6-22, price \$105, age 3 years, \$110, \$130; Sadie, born 2-6-19, $\frac{1}{2}$ Holstein, \$90, \$110; Mollie, born 8-7-19, $\frac{3}{4}$ Holstein, \$100, killed by lightning 7-24-22; Spotty, bought 6-8-19, pure-bred Holstein, price \$180, age 4 years, \$225, \$200; Sally, bought 4-9-20, $\frac{3}{4}$ Holstein, price \$145, age 3 years, \$175, \$180; Bull, bought 2-10-22, \$200, pure-bred Holstein, age 2 years ($\frac{1}{2}$ interest), \$100, \$125.

Work Horses. — Norman, born 1905, \$25, \$15; Maude, born 1912, \$150, \$135; Queen, bought 1915, price \$180, age 4 years, \$150, \$140; Dan, born 1912, \$160, \$140; Dell, born 1913, \$150, \$140; Nancy, born 1914, \$200, \$160; May, born 1914, \$200, \$185; Beauty, born 1915, \$185, \$185; Blanche, born 1918, \$125, \$160; Dorky, born 1918, \$140, \$175; Frank, born 1919, \$60, \$90; Jack, born 1920, \$55 (for second inventory only); Sally, bought 8-6-22, price \$210, age 4 years, \$225 in 1923.

Animals To Be Entered in Groups (First Inventory). — 4 calves, \$48; 3 yearlings, \$135; 7 steers, 7629 lb. @ 8½ cents; 6 heifers @ \$60. 2 young colts, \$110; 2 yearling colts, \$190; 1 two-year-old colt, \$100.

1 boar, \$45; 1 boar, \$55; 7 brood sows @ \$45; 39 shoats, 4180 lb. @ 9½ cents.

7 turkeys @ \$2; 2 gobblers @ \$3; 200 hens @ 75¢; 8 roosters @ \$1.25.

(Second Inventory). — 6 calves, \$90; 4 yearlings, \$160; 6 steers, 6120 lb. @ 8¢; 4 heifers @ \$65.

1 young colt, \$45; 2 yearling colts, \$180; 2 two-year-old colts, \$200.

1 boar, \$55; 6 brood sows @ \$50; 35 shoats, 3260 lb. @ 10¢.

9 turkeys @ \$1.75; 1 gobbler @ \$2.50; 170 hens @ \$1; 12 roosters @ \$1.30.

Machinery. — These data represent the first and second inventories taken on a farm. This explains the omission of many purchase dates and other incidental information.

1 grain binder, bought 1910, \$15, \$12; 1 drill, bought 1919, \$65, \$60; 1 McCormick grain binder, 6-foot cut, bought 1918, \$125, \$105; 1 fanning mill, bought 1916, \$28, \$25; 1 smut mill (½ interest), \$10, \$9; 1 International #2 manure spreader, bought 1918, \$140, \$120; 1 manure sled, \$3, \$2; 1 Wood #1 potato digger, bought 1914, \$9, \$6; 1 Deering 5-foot cut mower, bought 1920, \$55, \$50; 1 hayrake, bought 1919, \$22, \$20; 1 hayfork, \$8, \$7.50; 1 hay rope, bought 1920, \$5.50, \$5; 1 hay ladder, bought 1918, \$25, \$22; 1 International single-horse cultivator, bought 1921, \$35, \$32; 1 single cultivator, \$7, \$6; 1 corn grader, \$4, \$3.50; 1 Oliver #1 cultivator, \$55, \$50; 1 McCormick corn binder (½ interest), bought 1920, \$48, \$40; 1 Deering single-row corn planter (½ interest), bought 1920, \$26, \$22; 1 International #2 cultivator, bought 1921, \$55, \$42; 1 breaking plow, \$5, \$4; 1 drag, \$7, \$6; 1 drag, \$5, \$3; 1 hayrack, \$2, \$2; 1 truck, \$9, \$8; 1 wagon, \$10, \$30 (repaired); 1 bobsled, \$5, \$4; 1 bobsled, \$14, \$12; 1 sulky, \$12.50, \$11; 1 sulky

plow, \$20, \$18; 1 gang plow, \$55, \$48; 1 disk harrow, \$22, \$18; 1 hay-rack, \$5, \$5; 1 clod crusher, \$5, \$5; 1 weeder, bought 5-6-22, price \$25, inventory value 1923, \$25; 1 cream separator, bought 1913, \$20, \$16; 1 spray pump, \$8, \$7; 1 tractor, \$250, \$225; 1 circle saw, \$24.50, \$24.

1 set harness, \$14, \$12; 1 set harness, \$8, \$8; 1 single-driving harness, \$7, \$7; 1 set harness, \$32, \$30; 1 buggy, \$25, \$20; 1 tank heater, \$35, \$30; 1 feed cooker, \$12, \$10; 1 feed mill, \$35, \$30; 1 incubator, \$18, \$17.

Small Tools (First Inventory). — 8 milk cans, \$20; 4 common pails, \$3; 3 milk pails, \$4; 2 pairs horse collars, \$10; 2 pairs horse collars, \$6; 8 halters, \$6; 3 pairs sweat pads, \$6.50; 2 pairs fly nets, \$3; 2 pairs horse blankets, \$8; 60 grain sacks, \$13; 9 potato sacks, \$1.50; 2 spades, \$1.70; 1 brace, \$1.75; 3 bits, \$1.25; 6 hayforks, \$4; 2 barrels, \$12; 3 manure forks, \$3; 3 currycombs and 3 brushes, \$3.50; 1 snow shovel, \$1; 2 monkey wrenches, \$1.25; 2 claw hammers, \$2.25; 1 heavy hammer, \$1.50; 1 sledge, \$2.50; 1 post-hole digger, \$4.50; 2 axes, \$3; 1 crosscut saw, \$4.50; 1 bucksaw, \$2.50; 2 pairs pliers, \$1.50; 1 pair nippers, \$1; 1 wire stretcher, \$1.25; 4 files, \$1.25; 3 socket wrenches, 75¢.

(Second Inventory). — 10 milk cans, \$20; 4 common pails, \$2.50; 4 milk pails, \$5; 2 pairs horse collars, \$9; 2 pairs horse collars, \$5; 10 halters, \$8; 4 pairs sweat pads, \$8; 2 pairs fly nets, \$5; 2 pairs horse blankets, \$10; 54 grain sacks, \$11; 25 potato sacks, \$4.50; 2 spades, \$1.50; 1 brace, \$1.75; 5 bits, \$2.25; 5 hayforks, \$3; 2 barrels, \$11; 3 manure forks, \$2.75; 3 currycombs and 3 brushes, \$3; 1 snow shovel, \$1; 2 monkey wrenches, \$1; 2 claw hammers, \$2; 1 heavy hammer, \$1.50; 1 sledge, \$2.50; 1 post-hole digger, \$4; 2 axes, \$2.50; 1 crosscut saw, \$4; 1 bucksaw, \$2; 1 pair pliers, 75¢; 1 pair nippers, \$1; 1 wire stretcher, \$1.25; 3 files, \$1; 2 socket wrenches, 50¢.

Grains, Feeds, and Supplies (First Inventory). — Wheat, 380 bu. @ \$1.50; wheat screenings, $\frac{1}{2}$ T. @ \$10; oats, 605 bu. @ 50¢; barley, 486 bu. @ 60¢; oats, ground, 25 bu. @ 52¢; barley, ground, 23 bu. @ 65¢; ear corn, 25 bu. @ 50¢; alfalfa, 9 T. @ \$16; mixed ground feed, 2460 lb. at \$1.50 per cwt.; fence posts, 30 @ 10¢; fencing, 20 rods @ 80¢; lumber, \$10; bolts and nuts, \$2.50; lubricating oil, 6 gal. @ 24¢.

(Second Inventory). — Wheat, 260 bu. @ \$1.30; oats, 746 bu. @ 70¢; barley, 460 bu. @ \$1.10; bundle corn, 10 $\frac{1}{2}$ T. @ \$15; alfalfa, 4 T. @ \$18; clover seed, 14 bu. @ \$9; mixed ground feed, 3126 lb. at \$1.65 per cwt.; fence posts, 165 @ 15¢; fencing, 35 rods @ \$1.10; lumber, \$20; bolts and nuts, \$3.50; lubricating oil, 14 gal. @ 26¢.

Seasonal Work. — Manure hauled on field D in the fall of 1920, \$190, (compute values in 1922 and 1923, using the rule given in section 18); manure hauled on field B in the spring of 1921, \$210; manure hauled on field E in the fall of 1922, \$225; field A put into alfalfa in 1921 at a total cost of \$425 (see section 26); fall plowing, 1921, field C, \$87.50; putting field E into winter wheat, 1921, total cost, \$215; fall plowing, 1922, field E, \$53.75; fall plowing, 1922, field D, \$72.50; putting field B into fall wheat, 1922, total cost, \$265.

Real Estate. — Whole farm values, \$25,000, \$27,500. Estimated values: (1922) Tillable land, fields A, B, C, total 110 A. @ \$100, \$11,000; fields D, E, 60 A. @ \$125, \$7,500; field F, pasture, 38 A. @ \$60, \$2,280; dwelling house, \$1880; barn, \$1500; hog house, \$500; henhouse, \$200; machine shed, \$250; smokehouse, \$75; water system, \$250; lighting system, \$350; fences, \$380; drainage system, \$550. For method of finding adjusted values see section 11.

(1923) Land as in 1922; dwelling house, \$1700; barn, \$1450; hog house, \$450; henhouse, \$105; machine shed, \$240; smokehouse, \$75; water system, \$240; lighting system, \$340; fences, \$400; drainage, \$525.

Inventory Summary. — In the Inventory Account Book, enter the totals of the lists just finished and find the total inventory value of the physical farm properties of this farm.

31. Household inventory. — The Household Inventory consists of a list of all furniture, household utensils, personal clothing and ornaments, pictures, books, etc. It also includes any farm products such as potatoes, smoked meat, preserved fruits, and vegetables, definitely set aside for the use of the family operating the farm or for the use of hired help, and all property aside from buildings that is used or intended for the maintenance and housing of these people. This inventory is not an essential part of farm accounting, but is valuable for several reasons. For one thing, it forms a part of the farmer's financial statement. The larger and more valuable items should be listed individually the same as farm machinery, while the smaller items should be grouped the same as small tools.

52. Financial statement. — A financial statement is made out by a farmer to show his personal financial condition at the time that the farm inventory is taken. This statement includes not only the farm property but all property of whatever description that the farmer owns. It includes, for example, household goods, government bonds, and any other bonds and stocks that he may own, as well as debts that others may owe him. The financial statement includes also a list of all debts which the farmer owes to others. The debts may consist of bills at stores or implement shops, a note in the bank, or a mortgage on the farm.

On the next page is shown a convenient form of such a statement. The farmer's property constitutes his *assets*, and his debts constitute his *liabilities*. The difference between these is his *net worth*.

One important purpose of the financial statement is to secure credit at the bank. Many farmers are in the habit of discussing inventories and financial statements with their banker. It is the business of the banker to loan money for the purpose of carrying on the various business enterprises of his community, and he is often a valuable adviser on financial matters, for it is very much to his interest that those who do business with him should be successful in their own business. It is not infrequently the case that a farmer who keeps adequate records of his business and who takes the banker into his confidence secures a lower rate on loans than those who do not. It is far from true that only the poor and unsuccessful borrow money. The greatest business concerns are the heaviest borrowers, and they borrow because it pays them to do so. The farmer who borrows at the bank so as to be able to pay spot cash for his purchases is very likely to be better off than the farmer who buys on credit. The banks are the proper institutions to furnish short-term credit, and they usually do it more cheaply than any other institution.

Another purpose of the financial statement is to show how the farmer's net financial condition changes from year to year. Without such a statement for the beginning and also for the end of the year it is very easy for the farmer to deceive himself as to his real financial progress.

FINANCIAL STATEMENT

ASSETS	BEGINNING OF YEAR		END OF YEAR	
Farm inventory (see attached schedule)				
Household inventory (see attached schedule)				
Stocks, bonds, mortgages (see attached schedule)				
What others owe me (see attached schedule)				
Other property (see attached schedule)				
Cash on hand (see attached schedule)				
Total Assets				
LIABILITIES				
Notes I owe (see attached schedule)				
Store bills (see attached schedule)				
Other debts (see attached schedule)				
Total Liabilities				
NET WORTH (Assets minus Liabilities)				

Amount saved (or lost) during year (difference between net worth at the beginning and end of year) \$ ————. I am bondsman, surety, or indorser for ———— to the amount of \$ ————.

In case a farmer desires to secure credit with a bank, he may make out a statement like the above, add the paragraph below, sign, and give to the banker.

"For purpose of procuring credit from time to time from you for my negotiable paper and otherwise, the undersigned furnishes you the foregoing true statement of his financial condition for the year ending December 31, 19— and hereby agrees to notify you immediately in writing of any materially unfavorable change in his financial condition. In the absence of such notice or of a new and full statement, this is to be considered a continuing statement that my pecuniary responsibilities have not fallen below the condition herein set forth."

Signed this ——— day of ———— 19—

EXERCISE

1. Make out a statement, showing net worth and gain or loss in net worth, using the following data (the two figures given under each head indicate the values at the beginning and the end of the year respectively): Thus, the farm land was worth \$21,000 at both the beginning and at the end of the year, while the farm improvements were worth \$2570 at the beginning of the year and \$2680 at the end.

Assets: Farm land, \$21,000, \$21,000; farm improvements, \$2570, \$2680; cattle, \$2360, \$2140; horses, \$1930, \$2140; hogs, \$1460, \$1270; poultry, \$206, \$227; machinery and utensils, \$1360, \$1640; grain, hay, feed, supplies, etc., \$1760, \$2030; seasonal work, \$240, \$180; household inventory, \$780, \$930; cash on hand and in the bank, \$416.80, \$290.70; stocks, bonds, etc. (liberty bonds), \$750, \$450; what others owe me, none.

Liabilities: Notes I owe, secured by farm mortgage, \$1500, \$1000; notes I owe, not secured by mortgage, \$800, \$500; store bills, \$150.70 \$220; other debts, \$350, \$140.

After having completed this financial statement discuss fully the information that it contains.

TOPICS FOR STUDY AND DISCUSSION

1. What are the purposes of the financial statement?
2. What items should be included in the farm inventory? In this respect how does it differ from the financial statement?
3. What are the purposes of giving data for two years in the financial statement? If you have a series of financial statements extending over several years, discuss the value of the information they contain.

PROJECT

You should now be able to make out a complete inventory of your home farm. Remember that there is little use in studying this subject in school unless you are *able* and *willing* to apply what you learn in practice. In the Inventory Account Book enter a complete inventory of your farm. The inventory should be made out for a definite date and should represent the true conditions on that date, both as to quantities on hand and their farm values. It may be well to set the date some time ahead, so as to have sufficient time to make this inventory as nearly perfect as possible.

REVIEW OF PART ONE

TOPICS FOR STUDY AND DISCUSSION

1. By keeping accounts a certain farmer increased his yearly income by \$200. On what sum would this pay interest if the rate is 6%?
2. How much do you believe the yearly income from your home farm could be increased by intelligent and continued use of what you are learning about agriculture in your course? Discuss the various sources of this possible increase in income.
3. Suppose that, by taking a thorough course in farming and by making intelligent use of what you have learned, you should increase your yearly income by \$500, to what investment at 6% interest would this be equivalent? (Suggestion: \$500 is 6% of what sum?)
4. If the rate of interest is 6% then the present value of a yearly income of one dollar for thirty years is \$13.765. At this rate what is the present value of a yearly income of \$500 for thirty years? (If your yearly income as a farmer should be increased by \$500 by your study of agriculture and if you should continue farming for thirty years then this would be the sum you are earning by studying farming four years in the high school.)
5. Under the supposition of 4 how much per year would you be earning by studying agriculture four years? Is this more or less than you could make by going to work now? Is it more or less than your father is making on your home farm? Is this more or less than the yearly salary of one of your teachers?
6. Would you call a hired hand on the farm a business man? Why? Would you call a man that is running his own farm a business man? Why? If a man rents a farm and operates it for himself, would you call him a business man? Why? How would you decide in general whether a man is a business man or not?
7. In listing live stock in the inventory which ones would you list individually and which ones would you list by groups? How would you list an especially valuable calf?
8. Discuss the general method for determining the value of a dairy cow, also the method for determining the value of a horse. To what extent should the tables of depreciation of such animals be followed?

9. A farmer who has been keeping his dairy cows in the herd on an average of six years after they reached their prime decided to reduce this average to five years. How would this affect the yearly depreciation of his cows?
10. Discuss the reasons why an old horse or an old cow is likely to be less valuable than is generally supposed. Also discuss the value of old machinery.
11. What implements would you list separately in your inventory? How would you determine the yearly depreciation of these items?
12. What items would you list in groups under small tools? Describe the method of listing such items. What is the purpose of a temporary memorandum of the purchase of small tools?
13. Under what head would you list such items as spare parts for machinery, bolts and nuts, fence wire, lumber, binding twine, nails, etc.? Under what head would you list grain sacks?
14. What is meant by farm value? Discuss the farm value of products to be sold. If feeds are to be used on the farm, how should their inventory values be determined? Discuss the farm value of a new grain binder after it has been placed in the machine shed.
15. What is meant by the whole farm value of a farm? Which is easier to determine accurately, the whole farm value of a farm or different separate items, such as a field or a building? Give reasons for your answer.
16. What items of real estate are listed separately? Under normal conditions and good farming what items of real estate are liable to depreciation? Should these be listed separately? How does the depreciation of these show in the inventory?
17. Describe the inventory listing of manure and seasonal work. How is the value of manure determined? Discuss the inventory value of summer fallow.
18. Under what conditions should orchards and standing timber be listed separately in the inventory?
19. Give a complete list of items which should be entered in the farm inventory.
20. Describe the financial statement. How does it differ from the inventory? What are its purposes? Discuss its value to the farmer.

PART II

FINANCIAL ACCOUNTS

33. Purpose of Part II.—That a farmer can not decide from a financial statement such as is shown on page 39 how much he made during the past year in his farming business is shown by the following example :

The financial statement of each of two farmers shows that he saved about \$1000 during the year just closed. That is, the financial condition of each was improved by that much. One of these farmers had a small family, lived simply, and spent very little money outside his farming business. The other had a large family, a son and a daughter in college, and spent money freely on himself and his family. It is clear that the latter farmer must have made much more money during the year than the former. This difference is not shown in the two financial statements.

It is clear that if we know the value of a farmer's property at the beginning and end of the year and also the receipts from the farm and the expense of running it, we shall know how much he made during the year. This information can be put into the following form :

1. Inventory at end of year (excluding land)	\$	—
2. Farm receipts for year	\$	—
3. Value of food, fuel, and house rent furnished family	\$	—
4. Sum of items 1, 2, 3	\$	—
5. Inventory at beginning of year (excluding land)	\$	—
6. Farm expenses for year	\$	—
7. Sum of items 5, 6	\$	—
8. Net farm profits (item 4 less item 7)	\$	—

The purpose of Part II is to study the records and accounts that are necessary to make out a statement like the one shown here.

34. What should be included under farm receipts. —

Under farm receipts should be included all income of every kind derived from the farming business except farm products used by the farmer and his family. Among farm receipts are included the proceeds of sales of farm animals, crops, dairy products, eggs and poultry, garden truck and fruit, and any amounts received for rent of pasture, for use of a loaned machine, or pay for labor for others by either men or horses. Sales on credit are treated the same as cash sales, and this is true also of work done for others. But such items may also be entered in separate accounts (see page 64).

The value of exchange labor done for others is not included under farm receipts.

35. Form for entering farm receipts. — A convenient form for entering farm receipts is shown below. In column 1 (total) on page 45 enter all receipts of every kind. The receipts may be listed under several heads to make it convenient to find the total receipts from each of the farmer's main sources of income. In the record shown here receipts are divided under the heads: Wheat, Cattle, Hogs, Dairy, Fruit, and Miscellaneous. The heads to be used for any particular farm will depend upon the character of the farm and the information which the farmer wishes to obtain from his books. It will be understood that in the form shown below each line extends across the two pages.

FARM

DATE	ARTICLE SOLD	SOLD TO	QUANTITY	PRICE PER UNIT	
March 1	Apples	Arthur Smith	20 bu.	\$	1 50
March 2	From creamery .				
March 12	Hay	J. B. Walters	3625 lb.	20	01
March 12	Milk	S. H. Weeks	4 qt.		09
March 15	Veal calf	Arthur Smith			

TOPICS FOR STUDY AND DISCUSSION

1. A farmer sold a horse and entered the price in his farm receipts. How would this sale affect his net profit, as shown by the statement on page 43? (Suggestion: How would the selling of the horse affect the inventory?)
2. At the beginning of the year a farmer had lumber inventoried at \$150. During the year he sold part of this lumber for \$100. How would this affect his profit if he sold the lumber at a higher price than he would enter it in the next inventory?
3. A farmer sells a cow on credit to his neighbor and enters the sale in his cash receipts. Should the debt for this cow be included in the assets that go into the inventory used in the statement of net profit? Give reasons for your answer.
4. Would the net profit, as shown by the statement on page 43, be affected by a sale of corn for \$1000 just before the inventory is taken? Explain.
5. A farmer does exchange labor for his neighbor who does labor in return on the home farm. Should the value of this return labor be included under farm receipts? (Suggestion: Compare with the case when the farmer works on his own farm.)
6. A farmer does labor in exchange for his neighbor. The neighbor in return does labor for another neighbor who pays the first farmer in cash. Should this be entered among the farm receipts? How does this differ from the case when the return labor is done on the home farm?
7. State fully just what receipts should be entered among the farm receipts. Should interest on a liberty bond be entered under farm receipts?

RECEIPTS

1	2	3	4	5	6	7
TOTAL	WHEAT	CATTLE	HOGS	DAIRY	FRUIT	MISCELLANEOUS
\$30 00					\$30 00	
34 76				\$34 76		
36 25						\$36 25
36				36		
85 00		\$85 00				

36. What should be included under farm expenses. — The general principle is that all expenditures of running the farm should be included with the exception of the value of the farmer's own labor and that of his wife and the unpaid labor of his minor children. Wages of hired labor, purchases of feed, live stock, or machinery repairs, rent, taxes, insurance, interest on notes or mortgages are all included. If an automobile is used partly for the family and partly in the farming business, the share of the expenditure on account of the farm should be estimated and charged as farm expense.

Expenses of running the house, such as groceries (unless used for boarding hired farm labor), clothing, furniture, life insurance, should not be included.

37. Form for entering farm expenses. — Enter all expenses of all kinds in column 1 (total). In column 2 (live stock) enter all live-stock purchases. In column 3 (machinery and repairs) enter the cost of all new machines, repairs on all machinery and on farm improvements, such as buildings, fences, tiling, ditching, irrigation system, windmills, cistern, wells. In column 4 (labor) include all payments for wages and for groceries purchased for boarding hired labor. If new construction of farm improvements is undertaken, the cost should be entered in a separate column headed "capital investment." Any extensive improvements much beyond ordinary repairs should also be entered in this column.

FARM

DATE	ARTICLE BOUGHT	BOUGHT FROM	QUANTITY	PRICE PER UNIT	
March 1	Ground feed.....	James Ward	7.50 cwt.	\$3	00
March 9	Team shod.....				
March 14	Repair on harness.....				
April 1	Wages to Tom Watkins				
April 1	Paid road tax.....				

TOPICS FOR STUDY AND DISCUSSION

1. Why should not a farmer include the expenses of his family under his farm expenses? Does a merchant include the grocery bills of his family under the expenses of his business?
2. A farmer buys some feed for his cows, a pitchfork, two chairs for the sitting room, a suit of clothes for himself, some groceries, and paint for the barn. Which of these items should he charge under farm expenses?
3. A farmer puts up a new building at an expense of \$1000. How does this affect his net gain, as shown by the statement on page 39?
4. A farmer buys a carload of "feeders" (young cattle to be fattened for beef) for which he pays \$1350 in cash and does not sell them until after the inventory is taken and the statement of loss or gain made up. How will the total expense be affected by this transaction? How is the inventory affected? the net gain or loss?
5. One year a farmer makes only a few repairs on his buildings and buys no new machinery. How does this affect his farm expenditures? How does it affect his inventories? his net farm profit?
6. Does the total financial progress of a farmer, as shown by his financial statement, indicate how much he made in his farming business? Why?
7. Try to enumerate the kinds of expenditures which a farmer should enter under farm expenses. What kinds of items should he not enter under farm expenses? Should a contribution to a church or similar organization be entered under farm expenses?

EXPENDITURES

1	2	3	4	5	6	7
TOTAL	LIVE STOCK	MACHINERY AND REPAIRS	LABOR	FEED	CAPITAL INVEST- MENT	MISCELLA- NEOUS
\$22 50				\$22 50		
3 50						\$3 50
2 00		\$2 00				
27 50			\$27 50			
11 42						11 42

EXERCISES

Material for First Set of Farm Accounts

Farm receipts. Enter the following in the Financial Account Book. Head columns 2 to 7: cattle and dairy, hogs, poultry, corn, hay and straw, miscellaneous. These data are taken from a small eastern farm as they were put down in the farmer's record of receipts and expenditures. It will be understood that unless otherwise indicated, the receipts were from sales.

March: 1. $\frac{1}{2}$ bu. apples, 50¢; R. R. labor, \$36. 3. $2\frac{1}{2}$ doz. eggs, 95¢, 1 doz. eggs, 43¢; 2 qt. milk, 26¢. 10. 5 doz. eggs, \$1.90; 2 qt. milk, 26¢. 12. 1 doz. eggs, 43¢; 2 qt. milk, 26¢; hauling Bumbaugh's coal, \$1.20. 14. Hauling Gills's coal, \$2; creamery check, \$34.76. 17. $8\frac{1}{2}$ doz. eggs @ 35¢; 4 qt. milk, 50¢. 20. Will McCoy, hauling coal, \$3; Clyde Elden, 500 lb. hay, \$6.25; Clyde Elden, 300 lb. straw, \$1.50. 22. 8 doz. eggs @ 35¢. 24. 6 qt. milk, 76¢. 27. $2\frac{1}{2}$ doz. eggs, \$1. 29. $9\frac{1}{2}$ doz. eggs, \$3.04; 8 qt. milk, \$1.02. 31. 7 doz. eggs, \$2.45; 11 qt. milk, \$1.36.

April: 7. Helped Isaiah Cornelius moving, \$8. 8. 1000 lb. straw, \$7. 11. $7\frac{1}{2}$ doz. eggs @ 34¢. 12. Straw, 30¢; 8 qt. milk, \$1.04; 1 load manure, \$1. 14. $2\frac{1}{2}$ doz. eggs @ 33¢. 15. Creamery check, \$49.41; onions, 9 lb., 25¢. 19. 9 doz. eggs @ 35¢; 600 lb. hay, \$7.25; 8 qt. milk, \$1.02. 21. Dick Bixler for 1000 lb. hay, \$12.50. 22. F. F. Ritchey, Jr., 2000 lb. hay in barn, \$40; New Castle Notion Co. dividend, \$5. 26. 6 qt. milk, 78¢; 1 doz. eggs, 40¢; $6\frac{1}{2}$ doz. eggs, \$2.43. 28. Moving John Surena, \$4.

May: 1. 37 lb. smoked meat, \$10.36. 3. 7 doz. eggs @ 38¢. 4. 1 doz. eggs, 40¢. 5. 1 doz. eggs, 38¢. 6. 10 qt. milk, \$1.26. 8. Mrs. Carlston, old butter account, \$2.85. 9. 6 doz. eggs, @ 40¢. 10. $1\frac{1}{2}$ doz. eggs @ 40¢. 12. L. Cook for straw, \$2.50. 15. Creamery check, \$53.16. 16. Sold cow for \$115; 16 doz. eggs, \$7.75.

June: 1. $10\frac{1}{2}$ qt. milk, \$1.25; 1 pair little pigs to John Smith, \$12. 6. Plowing Mills's potato patch, \$5; 1 bu. oats, \$1. 7. $14\frac{1}{2}$ doz. eggs. \$5.85. 11. 93 lb. veal calf, \$11.16. 13. 5 doz. eggs, \$1.90; old buggy sold for \$2; Blain Grove Telephone Co. div., 60¢. 21. $3\frac{1}{2}$ doz. eggs @ 38¢ and 2 doz. eggs @ 45¢; creamery check, \$70.90; received from Election Board, \$5; received for 1 ham, \$4. 24. 5 doz. eggs @ 40¢ and 9 doz. eggs @ 42¢.

July: 1. 2 doz. eggs, 80¢. 7. 3 doz. eggs @ 40¢; working on road 1 day, \$3; pulling auto out of ditch, \$1. 12. 8 doz. eggs, \$3.44. 15. Creamery check, \$70.08; sold two-year-old steer, \$98.35; $\frac{1}{2}$ doz. eggs, 20¢. 19. 6 doz. eggs, \$2.85. 26. Helped W. Walker haying $\frac{1}{2}$ day, \$1.50; 5 doz. eggs @ 43¢; 3 qt. milk, 36¢; 2 doz. eggs @ 50¢.

August: 2. $3\frac{1}{2}$ doz. eggs @ 45¢; $1\frac{1}{2}$ doz. eggs, 70¢; 10 qt. milk, \$1.20. 4. 800 lb. hay sold at \$18 per T., \$7. 5. 51 lb. old chickens @ 25¢; 2 doz. eggs, \$1. 11. 1 doz. eggs, 50¢; 2 doz. corn, 50¢; A. C. McCoy for threshing at Kings, \$1.50; New Castle Notion Co. div., \$5. 15. Creamery check, \$77.13; 1 doz. corn, 25¢; 1 doz. eggs, 50¢; 2 doz. corn, 50¢. 25. $1\frac{1}{2}$ T. hay to Bixler, \$27.

September: 1. $3\frac{1}{2}$ doz. eggs @ 46¢. 2. Mowing Will Rainey's yard, \$1. 3. 1 doz. eggs, 46¢; 2 doz. eggs @ 48¢. 9. $2\frac{1}{2}$ lb. chicken @ 35¢; $5\frac{1}{2}$ doz. eggs @ 50¢. 15. Creamery check, \$46.71. 20. 1 doz. eggs, 55¢.

October: 1. $2\frac{1}{2}$ doz. eggs, \$1.25; hauling lime for Howard McCoy, \$3; sitting on Election Board, \$5; threshing for Ed Hosack, \$1; hauling Bob Gills's coal, \$2. 2. 7 chickens, 22 lb. @ 30¢. 11. 6 doz. eggs, \$3.30; 131 lb. veal calf @ $17\frac{1}{2}$ ¢. 15. Creamery check, \$28.09. 16. 17 lb. old rubber, 68¢. 18. 1 doz. eggs, 55¢; plowing for Will Rainey, \$2. 20. Sold 50 bu. corn, \$40. 25. Sold 4 chickens, \$4.31. 30. Steer, \$45.

November: 8. $2\frac{1}{2}$ doz. eggs, \$2; 2 bu. corn, \$1.70; Election Board, \$5. 15. 5 qt. milk, 38¢; creamery check, \$27.01. 21. Sold gravel, \$21; 4 qt. milk, 32¢. 22. For pasturing calf, \$5; straw, \$1.

December: 2. $4\frac{1}{2}$ bu. buckwheat, \$5.46; 1 bu. oats, 80¢; mowing last April, \$2. 3. Hauling Sill's coal, \$2.25; milk, \$4.10; 125 lb. veal calf, \$18.85. 4. Little pig, \$6; pasturing cow, \$7. 5. 4 bu. corn., \$3.20, and 200 lb. straw, \$1, 200 lb. buckwheat, \$4.80; hauling straw for Will Rainey, \$1.45. 6. $2\frac{1}{2}$ doz. eggs @ 80¢. 12. Moving John Hardisty, \$4. 13. John Fisher for hay, \$11; 1 doz. eggs, 75¢. 15. Creamery check, \$24.16; 391 lb. milk to Thos. Campbell, \$16.45; hay, \$140.75; straw, \$7.50; hauling, \$25; meat, \$7.25; corn, \$8.50; coal, \$11; flour, \$1.50. 16. 8 lb. sausage @ 30¢; $\frac{1}{2}$ doz. eggs, 25¢. 19. $19\frac{1}{2}$ lb. pork, \$4.90. 20. 10 bu. corn @ 85¢. 22. 23 lb. chicken @ 28¢; straw, \$2. 27. 8 qt. milk, 96¢. 29. 500 lb. hay, \$6.25; 200 lb. straw, \$1; 483 lb. milk, \$20.17; $1\frac{1}{2}$ lb. lard, 45¢.

January: 4. $\frac{3}{4}$ doz. eggs, 50¢. 11. 1 doz. eggs, 70¢; 400 lb. hay and 600 lb. straw, \$7. 15. Creamery check, \$55.32. 17. 8 lb. sausage, \$2.80. 20. 12 qt. milk, \$1.56. 22. 118 lb. veal calf, \$18.88. 25. Will McCoy for pig, \$5.

February: 1. F. A. Cozad, hauling rye, \$1.50. 2. 1 qt. milk, 12¢. 3. 14 qt. milk, \$1.75; 1 bu. apples, \$1. 4. 1½ doz. eggs, 1.02; 1 doz. eggs, 55¢. 10. 1 doz. eggs, 50¢; 2 qt. milk, 10¢. 14. Dan Aylsworth, \$1. 15. 4 qt. milk, 50¢; Bessenier and Lake Erie R. R. labor, \$18. 19. 4 qt. milk, 53¢. 22. 2½ doz. eggs, \$1.05. 22. 3 doz. eggs, \$1.14; 2 qt. milk, 26¢; moving Bob Gill, \$2. 28. 2 qt. milk, 26¢; 5 bu. buckwheat, \$10; creamery check, \$50.10.

Farm expenditures. — Enter the following in the Financial Account Book:

March: 3. Hauling milk to creamery, \$2.15; feed for dairy cow, 30¢. 4. Dehorning cow, 40¢. 5. Bought 8 shares in Jersey Bull Ass'n., \$40; paid F. F. Ritchey for cow, \$75. 12. Horse shod, \$2.20. 20. Standard Life Ins. Co. premium on policy, \$63.66 (is this a farm expense?); fare on Penn. R. R., 41¢.

April: 9. 100 lb. middlings for hogs, \$3. 15. Fence staples, 2 lb., 14¢. 19. Horse shod, \$3. 30. Feed for horses, 40¢.

May: 3. Barbed wire, 80 rds., \$5.37. 9. Repairs on harness, \$2; 100 lb. middlings for hogs, \$3.25. 13. American Jersey Cattle Club, transfer heifer, 50¢. 23. 2300 lb. slack, \$1.75. 24. Road tax, \$11.42.

June: 1. Collar pads for harness, \$1.50. 7. 100 lb. middlings for hogs, \$3.25. 13. Bought cow from Ritchey, \$150; services on pig, \$2; repairs for harness, \$1. 21. Paid for milk hauled to creamery, \$7.75. 27. Bought 1 pitchfork, \$1.25.

July: 2. Horse shod, \$1.20; F. L. Burton, 1 yr. interest, \$20. 7. 100 lb. middlings for cows, \$2.80. 10. Climax Lime and Stone Co. for 2300 lb. lime, \$11.20. 14. Light for buggy, \$2.75; 100 lb. middlings for cows, \$3.25. 15. 1 milk scales, \$3.50; paid for hauling milk to creamery, \$6.33. 16. Paid E. D. Galloway on note, \$350. 23. Paid Perry Macon for haying, \$11. 26. 100 lb. middlings for cows, \$2. 28. Plowpoints, 85¢; 200 lb. middlings for cows, \$4.

August: 8. 100 lb. middlings for cows, \$2.10. 12. County taxes for 1919, \$16.65. 15. Hauling milk to creamery, \$7.35; 6 sacks cement, @ 70¢; 100 lb. middlings for hogs, \$2.15; ½ interest in hayrake and loader, \$55. 25. Membership in Sales Ass'n., \$5.

September: 1. Service of bull to W. C. Dale, \$1. 2. 5 bu. seed wheat to Will Dale, \$10.50; 100 lb. middlings for cows, \$2.14. 9. Horse shod, 80¢; cow feed 100 lb., \$2.50; lime, \$6. 11. Tom Campbell helped cut corn, \$3.23. 30. School taxes, \$30.20.

October: 1. Bran for cows, \$2.60. 2. Binder twine, 84¢. 18. Rye ground for hogs and rye, 15¢; hauling milk to creamery, \$2.33.

November: 4. $\frac{1}{4}$ interest in silo distributor, \$5.25. 12. 13 sacks cement for silo foundation, \$10.40; chopping cow feed and feed, 25¢; horse shod, \$1. 19. Meat for threshers, \$3.60. 22. Ira McKay for threshing 125 bu. oats, \$5.62; Ira McKay for threshing 76 bu. wheat, \$4.56; Ira McKay for threshing 36 bu. wheat, \$3.24; Ira McKay for threshing 1 bu. clover, 58¢; Fire insurance for one year, \$5.30.

December: 1. Feed for cows, 70¢; $\frac{1}{4}$ interest in lard press, \$1.32. 3. 2800 lb. coal, \$8.80. 4. Transferring registered cow, 50¢. 5. 100 lb. oil meal, \$4.40. 6. Sausage cutter and butcher knife, \$4.50. 19. Coal, \$7.03. 22. Rooster, \$2. 29. Freight on silo, \$46.35. 31. R. R. fare, 15¢.

January: 13. 25 lb. calf meal, \$1.25. 20. Horse shod, \$5.50.

February: 1. Calf meal, \$1.45; bran, 55¢. 6. Repairs on harness, \$7.50. 10. Bran, 50¢; oil, 18¢. 17. Bought cow, \$75. 19. Feed ground and feed, \$1. 26. 30 lb. oil meal, \$1.85; 50 lb. bran, \$1.25; feed for hogs, 90¢. 28. One year's interest at 6% on a \$1500 farm mortgage.

Inventories. — Below are data for making complete inventories for this farm, both for the beginning and for the end of the year for which the receipts and expenditures have just been entered. Note that the actual depreciation of buildings and machinery is taken in round numbers. Thus, while the rate of depreciation on the barn erected at a cost of \$840 at 4% would give \$33.60 per year, the amount used is \$35. As stated in sections 9, 13, 14, and 15, the regular rates of depreciation are, at most, fairly good approximations, which must be corrected from time to time in accordance with the actual condition of each item of property.

Real estate. — Enter in the Financial Account Book: Whole farm value of real estate, \$10,000; Fields A and B, 65 acres @ \$100; Field C, 15 acres @ \$80; Field D, 10 acres @ \$60; orchard, 3 acres @ \$300. The preceding estimates are the same for both years. The dwelling is valued at \$1000 in 1922, and \$960 in 1923. In the following, the estimated values, March 1, 1922, are given; the values, March 1, 1923, are to be computed. Barn, built in 1907, cost \$840, depreciation 4%, or \$35, per year, value \$320; hog shed, built 1918, cost \$120, depreciation 5%, or \$6, per year, value \$70; henhouse, built 1914, cost \$60, depreciation 5%, or \$3, per year, value \$36; machine shed, built 1921, cost \$150, depreciation 4%, or \$6, per year, value \$150; fencing valued at \$240, March 1, 1922, and \$225, March 1, 1923; supplies for silo construction, 1923, \$62.

Live stock.—Enter in Financial Account Book. The values at the beginning and end of the year are given: 1 Jersey cow, \$75, \$75; 1 red cow, \$75, \$75; 1 grade Holstein cow, \$65 (sold during year); 1 two-year-old steer, \$40, \$50; 1 one-year-old steer, \$25, \$30; 1 Reg. Jersey calf, \$25, \$50; 1 grade Holstein calf, \$20 (sold during year); 1 grade calf, \$20 (sold during year); 1 veal calf, \$20 (first inventory); 1 Jersey cow (bought during year), \$100; 1 Jersey cow (bought during year), \$150; 1 Jersey cow (bought during year), \$75; 1 black horse, May, \$200, \$175; 1 roan mare, Sally, \$175, \$175; 1 brood sow, \$25; 2 hogs, \$20, \$40; 36 chickens, \$36; 38 chickens, \$38.

Machinery and tools.—Enter in Financial Account Book. The values at the beginning and end of the year are given: Wagon, bought 1918, cost \$80, yearly depreciation $8\frac{1}{2}\%$ (\$6.50) \$55, \$48; buggy, bought 1912, cost \$40, yearly depreciation 6% (\$2.40), \$15, \$12.50; heavy sled, bought 1914, cost \$25, yearly depreciation 6% (\$1.50), \$12, \$12; light sled, bought 1911, cost \$20, yearly depreciation 7% (\$1.40), \$4, \$2; walking plow, bought 1914, cost \$18, yearly depreciation 8% (\$1.50), \$6, \$5; spike-tooth harrow, bought 1917, cost \$14, yearly depreciation 7% (\$1), \$9, \$8; cultivator, bought 1922, cost \$22, yearly depreciation $8\frac{1}{2}\%$ (\$2), \$20; grain binder, $\frac{1}{2}$ interest, bought 1916, cost \$105, yearly depreciation $8\frac{1}{2}\%$ (\$9), \$50, \$40; hay loader and rake, $\frac{1}{2}$ interest, bought 1922, cost \$55, yearly depreciation $8\frac{1}{2}\%$ (\$3.50), \$50; mowing machine, bought 1916, cost \$60, yearly depreciation 10% (\$6), \$24, \$27 (new parts bought in 1922); hay tedder, bought 1918, cost \$35, yearly depreciation 7% (\$2.50), \$25 (burned in 1922, total loss); hayrake, bought 1915, cost \$15, yearly depreciation 7% (\$1), \$7, \$6; hayfork and ropes, bought 1915, cost \$9, yearly depreciation 10% (\$1), \$4, \$3.

Grain, hay, feed, supplies, etc.—Enter in Financial Account Book. The amounts and values at beginning and end of year are given: Hay, 20 tons @ \$20, 20 tons @ \$20; corn stover, 100 bundles @ 5¢, 500 bundles @ 5¢; straw, 10 tons @ \$6, 5 tons @ \$6; root crops, 6 bu. @ \$1, 5 bu. @ \$1; corn, 100 bu. @ 80¢, 400 bu. @ 75¢; oats, 200 bu. @ 70¢, 150 bu. @ 85¢; wheat, $4\frac{1}{2}$ bu. @ \$2, 30 bu. @ \$2; buckwheat, 7 bu. @ \$1.50, 64 bu. @ \$1; cottonseed meal, 100 lb. at \$3.25 per cwt., 25 lb. at \$4.52 per cwt.; rye, 3 bu. @ \$1.50, (1st inventory); clover seed, $\frac{1}{2}$ bu. @ \$16 (1st inventory); grass seed, $\frac{1}{2}$ bu. @ \$4, $\frac{1}{2}$ bu. @ \$10; lime, 320 lb. @ 4¢ (2d inventory); apples, 10 bu. @ \$1 (2d inventory); potatoes, 15 bu. @ \$1.50, 10 bu. @ \$2; vinegar, 15 gal. @ 20¢, 10 gal. @ 20¢; binder twine, 25 lb. @ 20¢ (2d inventory).

Seasonal work (1922). — Fall plowing, field A, 30 acres, \$48.00; manure in field B, \$35; manure in field B, \$15.

Food, fuel, house rent furnished family. — The value of the house rent furnished family is usually taken as 10% of the original value of the house (though in some cases it varies between 8% and 12%). This is supposed to be sufficient to cover depreciation, repairs, insurance, and interest on the investment. In this case the rent is \$100 per year. The value of the food and fuel furnished the family from the farm is estimated at \$150 for the year.

Farm profits. — Make out a statement in the form shown on page 43, showing net profit from the farm whose receipts, expenditures, and inventories you have just entered.

Material for Second Set of Farm Accounts

From the data given below work out a complete set of farm accounts; prepare a financial statement and a statement showing net income. The data are from a Montana farm for a recent year.

Receipts and expenditures. — The receipts and expenditures are given in mixed order as they came to the farmer in actual practice. Enter in the Financial Account Book. This account runs from January 1 to January 1.

January: 4. Received for cream, \$13.70; sold 7 doz. eggs @ 70¢; sold 10 bu. wheat @ \$2.50. 8. Bought barley seed, 30¢. 13. Received for cream, \$13.72. 16. Received for cream, \$7.20; paid repair on engine, 65¢, for grinding feed, \$1, for auto license, \$5. 22. Paid for gas, \$1.70, barn bill in town, \$1.65; received for cream, \$9.74; sold 12 doz. eggs @ 45¢. 28. Sold 11 doz. eggs @ 45¢; received for cream, \$4.52.

February: 1. Received for cream, \$4.70; sold 5½ bu. potatoes @ 60¢; paid for repair on harness, \$4. 8. Paid for repair on harness, 60¢; bought grease, 50¢; paid for potato advertisement, 50¢; received for cream, \$3.90; sold 10 doz. eggs @ 30¢. 11. Sold dressed pork, 103 lb., \$20.50; bought currycomb, 25¢; bought sheep shears, \$1.75. 15. Paid for stock salt, \$4.75; paid for gas, \$1.70; sold 12 doz. eggs, \$3.60; sold cream and butter, \$4.80. 20. Sold cream, \$4.33; bought corn, \$16.05. 28. Bought wheat feed, \$7.05; sold cream, \$3.25; sold 12 doz. eggs, \$3.60.

March: 7. Sold cream, \$3.80; received \$4.50 for hauling; sold milk, 75¢; bought hay, \$10.50; paid for oats and barley seed, \$55.80. 15. Paid veterinary, \$2. 17. Paid for gas, \$1.70; sold 12 doz. eggs, \$3.60. 21. Paid for shorts, \$8; sold cream, \$5.45; sold 4½ doz. eggs, \$1.35. 24. Sold 3 bu. potatoes @ 75¢ and 1 bu. of wheat, \$2.50.

April: 1. Bought sweet clover seed, \$0.60. 2. Paid for harness repair, \$1.25; bought seed corn, \$2.50; bought sweat pads, \$1.30; sold 31 bu. wheat @ \$2.25; sold cream, \$4.45. 8. Sold cream, \$8.35; sold 25 doz. eggs, \$7.50; received for 3½ bu. potatoes, \$2.10; received for 5½ doz. eggs, \$1.65; paid for harness repair, 80¢; bought 5 gal. paint, \$12.50; bought milkpail, \$1.10; paid for 100 posts, \$22; bought rope, \$1; bought post maul, \$1; hospital donation, \$13.25. 11. Repair bill for harness, \$4.50; sold 12 bu. potatoes, \$8.25. 17. Sold 16½ bu. wheat @ \$2.20. 18. Sold 12 doz. eggs, \$3.60; sold cream, \$8.85; received interest, \$30; paid for drill repair, \$1; bought oil and gas book, \$14.25; bought staples, 70¢; paid for harness repair, \$5; sold cream, \$7.92.

May: 1. Received for cream, \$8.56; received for 12 doz. eggs, \$4; paid for horse collars, \$2.75; bought spool fence wire, \$4.50; paid for lice killer, 75¢. 12. Repairs on batteries, \$3.90; sold 6 doz. eggs, \$2.10; received for cream, \$6.15. 19. Received for cream, \$8.17; received for 9 doz. eggs, \$3.15; sold 9 bu. potatoes, \$5.40; sold 1 bu. potatoes, 75¢; paid for bolts, \$1.10; paid for fly muzzles, \$1.40. 30. Paid H. Ray, \$70.50 for labor; paid for auto tire, \$22.35; received for cream, \$5.67; sold 12 doz. eggs, \$3.60; paid blacksmith, \$5.85; bought chicken wire, \$1.50.

June: 1. Paid for cultivator, \$8.25; bought seed corn, \$8.25; received for cream, \$3.90. 3. Bought horse powder, 75¢. 6. Paid for wire and staples, \$12.35. 11. Bought spade, \$1.75; received for cream, \$13.75; sold 9½ doz. eggs, \$2.85. 17. Received for cream, \$3.50. 24. Received for cream, \$7.70; sold 10½ doz. eggs, \$3.15. 26. Received for cream, \$6.38; sold flax, \$31.80; bought gas book, \$14.25; paid for cement, \$4. 28. Received for cream, \$2.76.

July: 3. Received for cream, \$6.48; sold hog, 310 lb., \$54.25. 7. Bought 12½ T. hay, \$250; bought shorts, \$6.60; received for eggs, \$2.80. 12. Sold cream, \$6.45. 15. Bought stack covers, \$22; bought calf, \$20. 18. Paid for hardware, \$5; sold pig, \$6. 22. Sold two cows, \$145. 24. Bought ½ T. hay, \$7.50; bought fence wire, 80¢. 26. Sold cream, \$2.07; sold 2½ doz. eggs, 75¢. 27. Sold cream, \$2.85.

August: 8. Sold cream, \$4.72; sold 4 cocks, \$2. 9. Paid W. Zadow for labor, \$22.75; paid for binder repair, \$1.10. 12. Sold 12 doz. eggs, \$3.50. 20. Sold cream, \$6.15; bought lubricating oil, \$4.75; paid H. Lucer for labor, \$21.25. 22. Paid for medicine for hogs, \$1.50; received for cream, \$1.98; received for eggs, \$3.60. 30. Sold 12 doz. eggs, \$4.80; sold butter, \$4.25; paid for welding, \$1.50.

September: 4. Bought heifer, \$45. 5. Sold 12 doz. eggs, \$4.20; received for cream, \$6.25; sold 66 bu. wheat, \$166.15. 11. Paid threshing bill, \$85.50; bought straw, \$10; paid W. Zadow for labor, \$2.75. 12. Paid repair bill on car, \$60. 15. Paid for wagon wheels, set, \$4.50; received for grain cutting, \$60; sold 224 bu. wheat, \$587.08. 18. Sold butter, \$3.90; bought snaps, grease, pins, 95¢. 24. Paid for gas book, \$14.25; sold butter, \$5.13; received for 24 doz. eggs, \$9. Bought cement, \$1; bought shorts, \$5.20. 29. Bought rye feed, \$30.50.

October: 1. Sold 68 bu. wheat, \$183.60; sold butter, \$2.50; bought feed, \$1.35. 2. Received for grain cutting, \$7. 7. Sold butter, \$5. 10. Paid for batteries and tar paper, \$2.50. 11. Sold 168 bu. wheat, \$445.20. 13. Sold steers, \$295. 14. Paid veterinary, \$2. 18. Sold butter, \$3.50; sold cream, \$3.75; sold potatoes, \$21.25. 22. Bought hay, \$63. 25. Paid for insurance on grain, \$5.50.

November: 1. Sold butter, \$4.20; bought whip, \$2. 7. Paid J. Lucier for labor, \$1. 8. Bought 8 bu. flaxseed, \$30; paid for tank heater, \$15.50; paid for barrel salt, \$4.50; sold butter, \$26.25; received for old hens, \$15.75; sold pork to Coleman, \$23.60; sold pork to Curtis, \$10; received for hauling, 75¢. 12. Sold pork to Fisher, \$19. 13. Bought chicken feed, \$10. 17. Paid for poultry tonic, 60¢; paid for gas, \$1.65; paid taxes, \$230.70; sold beef to Fisher, \$13.35; sold beef to Coleman, \$12.10; sold butter, \$10.20; sold cream, \$3.45. 29. Bought mill feed, \$4.65; paid for tool grinder, \$7; sold butter, \$14.40.

December: 5. Received for butter, \$1.20. 13. Received for butter and cream, \$5.20. 15. Received for butter, \$12.50; sold 6 doz. eggs, \$4.20; sold 43 bu. wheat, \$122.55; bought mill feed, \$9; paid B. Smith for coal, \$2.85; bought corn, \$17.80; paid refund for wheat, \$5. 16. Sold 50 bu. wheat, \$146.90. 19. Sold butter, \$4.50. 20. Received for milk, \$1. 23. Sold butter, \$4.50; received for eggs, 70¢; paid for feed and repairs, \$3.50. 26. Received for 51 bu. wheat, \$185.25. 30. Received for butter, \$4.20; paid for horseshoe nails, 30¢.

Inventory. — *Live stock (Horses).* — Beginning of year: 1 horse @ \$125; 2 horses @ \$100; 3 horses @ \$65.

End of year: 6 horses @ \$100; 3 horses @ \$60; 1 colt, \$60.

(Cattle) Beginning of year: 5 cows @ \$80; 2 heifers @ \$70; 1 heifer, \$50; 3 steers @ \$65; 2 steers @ \$50; 6 calves (under one year old) @ \$30; 1 bull, \$85; 1 brood sow, \$40.

End of year: 6 cows @ \$70; 2 heifers @ \$50; 6 steers @ \$40; 4 calves @ \$30; 1 bull, \$90; 1 brood sow, \$30.

(*Poultry*) Beginning of year: 55 hens @ \$1; 2 hens @ \$1.50.

End of year: 56 hens @ \$1; 1 hen, \$1.50.

Farm implements. — 1 heavy wagon, bought 1917, cost \$80, yearly depreciation $8\frac{1}{2}\%$, or \$7, value 1922, \$45, 1923, \$40; 1 heavy wagon, bought 1919, cost \$105, depreciation $8\frac{1}{2}\%$, or \$9, value 1922, \$75, 1923, \$65; 1 buggy, bought 1915, cost \$45, depreciation $8\frac{1}{2}\%$, or \$4, per year, value 1922, \$20, 1923, \$16; 1 sleigh, bought 1920, cost \$35, depreciation 10%, or \$3.50, per year, value 1922, \$25, 1923, \$23; 1 sleigh, bought 1914, cost \$20, depreciation $8\frac{1}{2}\%$, or \$1.75, per year, value 1922, \$8, 1923, \$6; sulky plow, bought 1921, cost \$80, depreciation $8\frac{1}{2}\%$, or \$6.50, per year, value 1922, \$75, 1923, \$68; 1 gang plow, bought 1919, cost \$110, depreciation $8\frac{1}{2}\%$, or \$11, per year, value 1922, \$80, 1923, \$70; 1 disk harrow, bought 1917, cost \$45, depreciation $8\frac{1}{2}\%$, or \$3.50, per year, value 1922, \$25, 1923, \$22; 1 spike-tooth harrow, bought 1921, cost \$35, depreciation 7%, or \$2.50, per year, value 1922, \$23, 1923, \$20; 1 cultivator, bought 1918, cost \$60, depreciation $8\frac{1}{2}\%$, or \$5, per year, value 1922, \$40, 1923, \$35; 1 corn planter, bought 1916, price \$30, depreciation 7%, or \$2, per year, value 1922, \$17, 1923, \$15; 1 grain binder, bought 1917, cost \$220, depreciation 10%, or \$22, per year, value 1922, \$110, 1923, \$95; 1 grain drill, bought 1919, cost \$85, depreciation 7%, or \$6, per year, value 1922, \$65, 1923, \$60; 1 mower, bought 1916, cost \$65, depreciation 7%, or \$4.50, per year, value 1922, \$35, 1923, \$30; 1 rake, bought 1917, cost \$40, depreciation 6%, or \$2.50, per year, value 1922, \$28, 1923, \$25; 1 hayrack, made 1921, original value, \$15, depreciation 10%, or \$1.50, per year, value 1922, \$14, 1923, \$12; 1 header box, bought 1922, cost \$24, depreciation $8\frac{1}{2}\%$, or \$2, per year, value 1923, \$23; 1 header, bought 1922, cost \$410, depreciation $8\frac{1}{2}\%$, or \$35, per year, value 1923, \$380; 1 manure spreader, bought 1919, cost \$180, depreciation 10%, or \$18, per year, value 1922, \$125, 1923, \$110; gasoline engine, bought 1917, cost \$95, depreciation $8\frac{1}{2}\%$, or \$8, per year, value 1922, \$50, 1923, \$40; 8 work harnesses, total value 1922, \$150, 1923, \$125; small tools, total value 1922, \$60, 1923, \$60.

Grain, feeds, supplies, etc. — January 1, 1922, 300 bu. spring wheat @ \$1.75; 275 bu. oats @ 70¢; 15 bu. barley @ \$1.25; 10 T. straw @ \$3; 2 T. wild hay @ \$15; $4\frac{1}{2}$ T. alfalfa @ \$20; 2 T. other hay @ \$15; 60 bu. potatoes @ 60¢; 9 bu. flax @ \$3; $\frac{1}{4}$ T. mill feeds @ \$40.

January 1, 1923: 400 bu. spring wheat @ \$1.45; 90 bu. oats @ 90¢; 15 T. straw @ \$4; 2 T. wild hay @ \$15; 8 T. alfalfa @ \$20; 3 T. other hay @ \$15; 20 bu. potatoes @ \$1.25; 6 bu. flax @ \$5; $\frac{1}{4}$ T. mill feeds @ \$48.

Real estate. — (Use the same data for both inventories) Field A, tillable land, 80 acres @ \$75; Field B, tillable land, 120 acres @ \$100;

Field C, tillable land, 40 acres @ \$60; Field D, tillable land, 120 acres @ \$60; Field E, permanent pasture, 240 acres @ \$20; range, 1260 acres @ \$10; dwelling, built 1914, cost \$1800, depreciation 4%, or \$72, per year, value 1922, \$1200, 1923, \$1150; barn, built 1907, cost \$1550, depreciation 4%, or \$62, per year, value 1922, \$580, 1923, \$520; granary, built 1915, cost \$260, depreciation 4%, or \$10, per year, value 1922, \$190, 1923, \$180; machine shed, built 1919, cost \$180, depreciation 5%, or \$9, per year, value 1922, \$155, 1923, \$145; henhouse, built 1913, cost \$110, depreciation 5%, or \$5.50, per year, value 1922, \$60, 1923, \$55; fences, value 1922, \$480, 1923, \$450. Whole farm value, \$40,000.

Seasonal work. — January 1, 1922: Fall plowing, 85 acres @ \$1.20; fall wheat, 60 acres, plowing, dragging, seeding @ \$2.15 per acre; 100 bu. seed wheat @ \$3; summer fallow, 52 acres @ \$1.75 per acre.

January 1, 1923: Fall plowing, 120 acres @ \$1.25; fall wheat, 80 acres @ \$2.25; 130 bu. seed wheat @ \$3.50; summer fallow, 52 acres @ \$1; manure, \$50.

Additional data for Financial Statement. — January 1, 1922: Note secured by mortgage on farm, \$7500; other debts, \$480; cash on hand, \$546.50; liberty bonds, \$400; household inventory, \$1960; bills receivable, \$48.50.

January 1, 1923: Note secured by mortgage on farm, \$7500; other debts, \$240; cash on hand, \$1120; liberty bonds, \$400; household inventory, \$2150; bills receivable, \$71.

Additional data for Loss or Gain Statement. Rent of dwelling, \$180; food and fuel from farm, \$275.

TOPICS FOR STUDY AND DISCUSSION

1. Why should a farmer regard as income the food and fuel furnished family from the farm? If a man keeping a grocery store sends groceries to his home, should he regard the value of these groceries part of his income?
2. If the dwelling is regarded as a part of the farm capital, and repairs and insurance on it are charged as farm expenses, why should house rent be regarded as part of the net income?
3. A cow is sold to a neighbor on credit and the price entered as a cash receipt. If not paid at the time of making loss and gain statement, should this debt be included? Should it be included in the financial statement?

38. Farm capital. — By farm capital is meant the total value of all physical properties used in operating the farm, together with a certain amount of cash needed to carry on the business. The farm capital is not affected by a mortgage or other debt on the farm. That is, the farmer's property interest in the farm has nothing to do with farm capital. A machine used on the farm is farm capital whether it is paid for or not.

There is not complete agreement among farm accountants as to whether the dwelling is to be regarded as farm capital or not, but the accounts are simplified by including the dwelling in the farm capital. It may be argued that the money invested in a farm dwelling is no more to be regarded as capital invested in the farming business than the home of a merchant is to be regarded as capital invested in the mercantile business. There is this difference, however, that one can not own a farm without owning the farm dwelling, and hence there is good reason for regarding it as farm capital and the housing of the family as inseparable from the farming business proper. If a rental of 10% of its original cost is credited to buildings, the result in the long run will be about the same as if the dwelling had been kept separate.

39. Changes in value of land. — Land sometimes changes in value for reasons entirely apart from its productivity. Farms in Iowa which 30 years ago sold for about \$100 per acre now sell for upward of \$200 per acre. This is not due to increased fertility or to improvements but to the fact that all the best land in the country has now been taken and that hence there has been an increasing demand for good land already under cultivation. In other cases the value of land may decrease for reasons other than change in fertility. Such changes should not be made a part of the net profit or loss of the farming operation. For this reason the inventory value of the land is not included in the form given on page 60.

40. Orchards and timber. — The yearly increase in the value of a growing young orchard should be regarded as part of the farm income, and the yearly decrease in the value of an old orchard that is not kept up should be regarded as a part of the outgo. In the farm accounting this is effected by entering the value of the orchard in each inventory. The difference in the value at the beginning and end of the year shows the amount of gain or loss.

If a farmer has a timber lot of considerable size he may cut a certain amount each year without diminishing the value of the standing timber, since the amount cut down is replaced by the growth of the trees that are left. In this case the farmer may be regarded as collecting each year the normal income from the timber lot, and this income is entered among his farm receipts. If none of the trees are cut, the growth will increase the value of the standing timber, and this should be regarded as a part of his farm income just the same as the increased value of a growing orchard. The increase in value is brought into the farm accounts through the inventories, as in the former case.

If a farmer should cut down more than is replaced by growth, this would show on the one side in increased farm receipts and on the other side in decreased inventory value of standing timber.

41. Value of food, fuel, and dwelling furnished family. — There is no doubt but that the value of food, fuel, and dwelling furnished the farmer's family from the farm should be regarded as part of the net income from the farming business. If complete cost accounts are kept, there will be an account showing the items of food and fuel used by the family with the farm value of each item. In case no such accounts are kept, the value of these two items (food and fuel) should be estimated. The value of the use of the dwelling may be fixed at 10% of its original cost.

42. Income statement. — The following statement shows the income from the total farm operation, the income which the farmer derives from his own labor, and the rate of interest which he makes on his investment.

1. Inventory at end of the year (excluding land)	\$ ———	
2. Farm receipts for year	\$ ———	
3. Food, fuel, and house rent for family	\$ ———	
4. Sum of items 1, 2, 3	\$ ———	
5. Inventory at beginning of year (excluding land) . .	\$ ———	
6. Farm expenses for year	\$ ———	
7. Sum of items 5 and 6	\$ ———	
8. Net farm profits (item 4 less item 7)		\$ ———
9. Interest paid on farm debts	\$ ———	
10. Sums of items 8 and 9	\$ ———	
11. Value of unpaid labor of farmer's family	\$ ———	
12. Earning of total farm capital and farmer's own labor (item 10 less item 11)		\$ ———
13. Earning of farmer's own capital and his own labor (item 8 less item 11)		\$ ———
14. Inventory value of land, beginning of year	\$ ———	
15. Interest on farm capital at ———% (farm capital is item 5 plus item 14)	\$ ———	
16. Labor earnings of farmer (item 12 less item 15) . .		\$ ———
17. Value of farmer's own labor (estimated at fair wages) .	\$ ———	
18. Earnings on farm capital (item 12 less item 17) . . .		\$ ———
19. Rate of interest earned on investment (divide item 18 by item 5 plus item 14)		———%

This table is largely self-explanatory. To find the earnings on the total farm capital and the farmer's labor, it is necessary to add interest paid on farm debts (if any) since this was deducted by including it in the farm expenses. It is also necessary to deduct the (estimated) value of the unpaid labor done on the farm by members of the farmer's family other than himself.

43. Some measures of the farm business. — The following form suggests some facts which will help the farmer to improve his business. Many of these facts can be determined from the farm accounts developed thus far, and the others can be found easily at some time or other during the year. This statement should be partly filled out whenever facts that go into it come to hand. Thus, the acreage of wheat and the yield should be entered just after the wheat is threshed.

	YOUR FARM	AVERAGE FOR GOOD FARMS
Size of Business: Total number of acres		
Acres of crops grown (include meadow)		
Months of man-labor (include operator's)		
Number of work stock		
Number of milk cows		
Crop yields and acreage: Corn		
Wheat		
_____		
Live-stock returns: Total income from live stock		
Dairy receipts per cow		
Receipts per brood sow		
Receipts per ewe		
Total pounds of beef produced		
Total pounds of pork produced		
Total pounds of mutton produced		
Efficiency in use of labor: Crop acres per man		
Crop acres per horse		
Costs: Total cost of feeds purchased		
Total value of man-labor		
Profits: Labor income		
Per cent return on investment		

The total number of pounds of beef produced is found by adding to the inventory (in pounds) of beef cattle at the end of the year the total sold and subtracting the inventory at the beginning of the year together with amount bought (if any) during the year. The number of pounds of pork and mutton produced during the year is found in the same manner.

The total value of man-labor is found by adding to the estimated value of the farmer's own labor (item 17 on page 60) the amount paid out in wages and the estimated cost of boarding hired labor and also the estimated value of the unpaid labor of farmer's family (item 11 on page 60). The labor income is item 16 on page 60 and the per cent return on investment is item 19 on that page. For a further discussion of the meaning of the word income as used in farm accounting see pages 170, 171.

PROJECT

You should now consider the project of keeping a complete set of books for your home farm. At this stage of your progress in learning farm accounting you should be able to work up a complete inventory and keep the financial accounts for any farm. The best time to start this practical work is now, while you are in school where you can get help on doubtful points, and while you have time to give more thought to it than you will have when you get into the work of actually running a farm for yourself. The next part of this book deals with cost accounting, and if you should decide to keep a complete set of cost accounts for your farm, you will either have to wait a few weeks before starting your accounting or else your teacher will have to show you what records are necessary. By reading in the next part of this book you will be able to start the cost accounting for your own farm with little or no further help.

44. Estimating value of food, fuel, and rent. — Data to be used in estimating the value of food, fuel, and house rent furnished the family from the farm may be entered in a form like the following:

ITEM AND QUANTITY	VALUE
House rent, 8 to 12% on value of house to cover interest, depreciation, and upkeep	
Wood, — cords @ \$ — per cord	
Milk, — quarts per day \times 365 @ — cents per qt.	
Butter, — pounds per week \times 52 @ — cents per lb.	
Eggs, — dozen per week \times 52 @ — cents per doz.	
Chickens, — @ \$ — each	
Poultry, — @ \$ — each.	
Beef, — pounds @ — per lb.	
Pork, — pounds @ — per lb.	
Mutton, — pounds @ — per lb.	
Potatoes, — bushels @ \$ — per bu.	
Other vegetables,	
Fruit: Apples, — bushels @ \$ — per bu.	
Berries, — quarts @ — cents per qt.	
Total*	

* Subtract from the total the estimated value of living used by hired help. In making such an estimate two children are regarded as equivalent to one adult.

A charge may be made for the keeping of driving horses kept for personal use and for any other expenses met by the farm but not contributing to the income of the farm.

EXERCISES

1. A farmer's family consists of three children, his wife, and himself. During the year he has hired help for a total of one man for fifteen months. The total estimated value of food, fuel, and rent furnished from farm is \$650. How much should be deducted on account of using part of this value for boarding hired help?

2. Using the data obtained from pages 48-53 of this book and the additional data given below make a statement of the form shown on page 60. The farm capital, except cash, the total farm expenses, and total farm receipts are shown in the records that you have made of these data. The following additional data are necessary (enter these in the Financial Account Book): Cash for farm use, \$250; rental charge for dwelling, \$100; wood used, 5 cords @ \$5.50; milk, 2 qt. per day for 365 days @ 7¢; 2½ lb. butter per week for 52 weeks, @ 45¢; 1½ doz. eggs per week for 52 weeks @ 50¢; 64 chickens @ 60¢; beef, 360 lb. @ 15¢; potatoes, 13 bu. @ \$1.10; other vegetables valued at \$18.50; fruit valued at \$12; value of unpaid labor by members of farmer's family, \$75. For the purpose of finding labor income use 6% as the rate on the farm capital. For the purpose of finding the rate of interest earned on the farm capital use \$60 per month as the value of the farmer's own labor.

3. Using the farm capital, total farm expenses, and total from receipts shown in your records entered from pages 53-57 of this book and the following data make a statement like that required in 1. Cash for farm use, \$450; total value of living from farm estimated at \$650; estimated value of unpaid labor by members of family, \$100; board of hired help, \$45 (add this to expense). For the purpose of finding labor income use 6½% as the rate on the farm capital. For the purpose of finding the rate earned on the farm capital use \$80 a month as the value of the operator's labor.

4. If the farmer in 2 should decide that his labor is worth \$900 a year, what would be the rate earned on the capital invested in his farm?

5. Which is the better procedure: to fix the rate on the investment and apportion what is left to labor income or to fix the labor income and apportion what is left to interest on investment?

45. Accounts with individuals. — It may be necessary, or at least worth while, for the farmer to make a record of persons who owe him money or to whom he owes money. In most cases the following forms will be sufficient :

PERSONS WHO OWE ME

NAME	DATE	WHAT FOR	AMOUNT	WHEN PAID
Sam Walker	March 8, '22	14 bu. seed wheat	\$45 ⁰⁰	Oct. 4, '22

PERSONS WHOM I OWE

NAME	DATE	WHAT FOR	AMOUNT	PAID
Dan McCarthy	May 12, '22	Mowing machine	\$65 ⁰⁰	Sept. 4, '22

In case a farmer runs an account with a store and does not settle in full each month a different form may be used :

GEO. BECKWITH MERCANTILE CO.

CHARGES

CREDITS

DATE	HOW PAID	AMOUNT	DATE	WHAT FOR	AMOUNT
Feb. 7	8 doz. eggs @ 60¢	\$4 ⁸⁰	Feb. 1	Bill for January	\$13 ⁸⁰
Feb. 24	55 doz. eggs @ 50¢	2 ⁵⁰	Mar. 1	Bill for February	9 ³⁰
Mar. 9	10 doz. eggs @ 40¢	4 ⁰⁰	Apr. 1	Bill for March	27 ⁶⁰

The credits may be entered monthly from the statement sent out by the storekeeper.

All payments made by the farmer to the store, whether in cash or in produce, are charged to the store by entering the items on the left side of the account.

46. Income other than from farm operations. — To obtain a complete record of his financial affairs, the farmer must make a record of all business transactions though they are not connected with the farm. In most cases these will consist of minor items of income from outside sources.

TOPIC FOR STUDY AND DISCUSSION

Does income other than from farm operations enter into the statement on page 60? Does such income enter into the financial statement?

47. Federal Income Tax (taxable income). — Every person living in the United States whose yearly net income is above a certain amount must make out a schedule stating the facts from which his taxable income may be computed. The methods by which a farmer may compute his taxable income are given in sections **48** and **49**. Certain principles apply to all such methods.

1. The value of the food, fuel, and use of dwelling that the farm furnishes the farmer and his family are not part of the farmer's taxable income.

2. Changes in the value of land are not regarded as income (if the value increases) or as expenses (if the value decreases).

3. Depreciation of farm improvements, such as buildings, fences, etc., should be regarded as farm expenses. This depreciation is shown in the successive inventories.

4. Depreciation should be deducted only on improvements used in the *farming business*. Thus, a farmer may not deduct depreciation on the farmhouse in which the family lives.

5. The value of unpaid labor done on the farm by members of the farmer's family may not be regarded as a farm expense.

6. Since taxable income is derived from the work of the farmer and his family and from the farmer's own capital, interest on farm debts may be regarded as expenses.

7. Personal expenses of the farmer, unless incurred directly in the farming business, and the general expenses of his household or members of his family are not deductible expenses. Thus, a farmer accompanying a carload of cattle to market may charge his personal expenses as farm expenses, but not if he goes to the city on a pleasure trip.

8. A gift or an inheritance is not taxable income, though the subsequent income from such property is taxable.

48. Accrual basis for computing taxable income. — When farm income is computed on the so-called accrual basis, any increase in the value of farm property (always excluding land) is regarded as income whether the property has been sold or not. Thus, a colt valued at \$80 at the beginning of the year and at \$100 at the end of the year represents \$20 in income. Unsold products, such as grains, hay, young hogs, or calves that were produced entirely within the year, represent income to the extent of their total value. Growing orchards or timber represent income to the extent of the increase in their values.

The following form, filled in as indicated, gives the taxable income as computed on the accrual basis.

1. Net farm profit (item 8, page 60)	\$ ———
2. Value of food, fuel, and house rent	\$ ———
3. Item 1 less item 2	\$ ———
4. Depreciation and repairs on dwelling	\$ ———
5. Taxable income (item 3 plus item 4)	\$ ———

The depreciation of the dwelling is included in the inventories used in computing net farm profits (item 1) and must therefore be added to give taxable income. Repairs on dwelling are also included among the farm expenses used in computing the net farm profit and must therefore be added to obtain taxable income. The amount of the repairs can be found by glancing over the cash expenditures and by taking note of any hired labor that may have been used for this purpose. To find the amount of the depreciation to be added, 4% of the original value is a fair rate on a frame house and 2% on a brick house.

TOPICS FOR STUDY AND DISCUSSION

1. In computing taxable income may the farmer charge the value of his own work as a farm expense? Why? May he thus charge the value of the labor of a minor son?
2. A farmer sells milk to the creamery and buys butter for the use of his family. How would his taxable income be affected by making this butter on the farm?

49. Cash receipts and disbursement basis for computing farm income. — The so-called cash receipts and disbursement basis, or simply the cash basis, of computing taxable income is used by many farmers, since at first glance it appears to be simpler than the accrual basis. It differs essentially from the accrual basis method in that all inventories are omitted. The theory is that, in the long run, the farm products will be sold, as in the case of wheat, cotton, and hogs; or that they will be used in producing other articles to be sold, as in the case of corn fed to hogs, dairy cattle used for the production of milk and cream, or draft horses used in conveying other salable commodities. The following are the principal rules to be observed:

1. Gross income includes the selling price of all articles sold from the farm less the price for which any of these articles may have been bought. Thus, the gross income from a steer bought for \$35 and sold for \$85 would be $\$85 - \$35 = \$50$. Sales made on credit should be regarded as cash sales, and goods bartered away should be regarded as sold at a fair cash price.

2. From the gross receipts should be deducted certain depreciations (see 3 below) together with all farm expenditures except capital expenditures (see 4 below). No expenditure on the farm dwelling may be deducted.

3. The depreciations to be deducted are depreciations on farm machinery (but not on small tools), on all farm animals purchased for use, and on all farm improvements (not including dwelling). No depreciation may be deducted on animals raised on the farm nor on animals purchased for resale.

4. Capital expenditures, which are not to be deducted, include all costs of new machinery (not including small tools), of new farm improvements, and of animals purchased, whether they are intended for use on the farm or for resale. The cost of purchased animals is deducted in case they are sold (see 1 above).

EXERCISES

1. Using the data given on pages 48-53 in the Financial Book, make out an income tax schedule on the cash receipts and disbursement basis. Use a blank like the one given on page 69. Use the cash receipts as already entered, deducting the following purchase price of animal sold: 1 cow, \$65. Use farm expenses as already entered omitting: 1 cow bought, \$75; 1 cow, \$150; 1 hay loader and rake, \$55; items on silo totaling \$62. Depreciation of farm improvements and farm machinery may be taken directly from the inventories already prepared. There will be no depreciation of farm animals since there was no depreciation on animals that had been purchased.

2. Using the data on pages 53-57, prepare an income tax schedule on the cash receipts and disbursement basis. Scrutinize the receipts with care to see whether any of these should be deducted. Also see if any of the disbursements should be deducted. Are there any farm animals, the depreciation on which should be deducted.

TOPICS FOR STUDY AND DISCUSSION

1. When reporting on the cash basis, the depreciation of a horse that is raised on a farm may not be deducted, while the depreciation may be deducted if the horse was purchased. Why?
2. The annual depreciation of a horse whose prime value was \$100 is estimated at \$25. If the horse was purchased as a one-year-old colt for \$60, should the depreciation be deducted?
3. A steer bought for resale is sold at a loss of \$25. How would this affect the taxable income when reporting on the cash basis?
4. A new lighting plant is installed on a farm at a cost of \$500. How does this affect the taxable income? How does the yearly depreciation on this plant affect this income? It is understood that this plant is used to light the living house only.
5. A new silo is built at the cost of \$600. How does this affect the taxable income? How does the yearly depreciation affect this income? Is it likely that the building of the silo will reduce the taxable income? Discuss fully.
6. A horse bought for \$200 is kept five years and sold for \$75. How would this affect the taxable income the year the sale is made
(a) if no depreciation had been deducted during the five years,
(b) if \$25 depreciation had been deducted yearly?

7. How would you keep a record of a sale made to a neighbor on credit? of a purchase made on credit? Discuss the importance of such records.
8. Describe an account with a store at which monthly bills are run and to which the farmer sells products from time to time. How much time would it take to keep such an account?

INCOME SCHEDULE, CASH RECEIPTS AND DISBURSEMENT BASIS

ITEM	AMOUNT RECEIVED	COST OF ITEM IF PURCHASED
Live stock : Cattle Dairy products Hogs Horses Sheep Poultry Eggs		
Crops : Corn Oats Wheat Other crops		
Miscellaneous receipts		
Total	Column 1	Column 2

FINAL SUMMARY

1. Sales of live stock, crops, and products during year (Col. 1 above)	\$ ———
2. Cost of items sold if purchased (Col. 2 above)	\$ ———
3. Gross profits (subtract item 2 from item 1)	\$ ———
4. Expenses: Repairs (Col. 3, Financial Acct. Book)	\$ ———
5. Labor (Col. 4, Financial Acct. Book)	\$ ———
6. Feed (Col. 5, Financial Acct. Book)	\$ ———
7. Miscellaneous (Col. 7, Financial Acct. Book)	\$ ———
8. Depreciation farm property	\$ ———
9. Depreciation farm machinery	\$ ———
10. Depreciation on work and breeding animals *	\$ ———
11. Total (items 4 to 10)	\$ ———
12. Net farm profit (item 3 minus 11)	\$ ———

* Depreciation may be claimed on animals purchased for draft, dairy, or breeding purposes or for any purpose other than resale.

50. Changing from cash basis to accrual basis. — Since the accrual basis is in every way a more desirable form of accounting than the cash receipts and disbursements basis, the process of changing from one to the other is of interest. The principle on which the Department of the Interior proceeds is that all increases in the value of farm animals made since January 1, 1915, are to be regarded as income; and in case the accrual basis had been used each year since that time, this would clearly be done. In case the cash basis is used, the increases will be entered as income only as sales are made. If a farmer changes from the cash to the accrual basis of reporting, he will not be permitted to deduct the live-stock inventory at the beginning of the year, for that would wipe out all income that may be represented by increase in stock in the preceding years. Hence the best procedure is to adjust back to January 1, 1915, either from records at hand or by proof satisfactory to the Commissioner of the Internal Revenue Bureau. After the first year, reporting on the accrual basis will present no difficulties of this sort.

EXERCISES

1. In the Financial Account Book enter the following (see page 64): *May 9*, bought a cow from B. A. Martin for \$95, paid for it Sept. 7; *June 2*, bought colt for \$70 from Marvey Warner, paid for it Sept. 9; *July 9*, bought mowing machine for \$75 from Horace Worden, paid for it Oct. 3; *Aug. 1*, owed John Proctor \$55 for work in July, paid in full Oct. 3; *Nov. 3*, bought 6 cords of wood from Wilber Stone @ \$4.50, paid in full Dec. 7; *Dec. 9*, bought sled on credit for \$18 from Horace Worden. *July 6*, sold a cow for \$95 to John Wallace on credit. Received payment on Oct. 12. *Aug. 14*, sold on credit 7 young hogs for \$125 to Harry Palmer. Received payment on Nov. 3. *Nov. 6*, sold on credit to Robert Smith one horse for \$225.

2. The year's account with the Westfield Mercantile Co. contains the following record of monthly purchases: Jan. \$8.40; Feb. \$27.60; March \$21.30; April \$9.20; May \$42.50; June \$31.20; July \$47.75; Aug. \$29.15; Sept. \$17.25; Oct. \$53.65; Nov. \$3.80; Dec. \$93.25.

Cash payments and sales made to the store by the farmer: *Feb. 9*, 5½ doz. eggs @ 55¢; *Feb. 24*, 19 doz. eggs @ 40¢; *March 4*, 15 lb. butter @ 60¢; *March 14*, 21 doz. eggs @ 30¢; *April 3*, 16½ doz. eggs @ 30¢; *May 3*, cash \$20; *May 12*, 21 lb. butter @ 45¢; *May 19*, 31 doz. eggs, @ 35¢; *May 29*, 41 qt. strawberries @ 8¢; *June 2*, 18 doz. eggs @ 40¢; *June 19*, 14½ doz. eggs @ 40¢; *June 27*, berries, \$12.60; *July 2*, 21½ doz. eggs @ 40¢; *July 21*, 8 doz. eggs @ 45¢; *Aug. 9*, 19 doz. ears corn @ 15¢; *Aug. 14*, 64 doz. ears corn @ 10¢; *Sept. 24*, 13 spring fries @ 55¢; *Oct. 3*, cash \$50; *Nov. 25*, 107 lb. butter @ 55¢; *Dec. 18*, 8½ doz. eggs @ 70¢. (For form see page 68.)

REVIEW OF PART II

TOPICS FOR STUDY AND DISCUSSION

1. What items are entered in the loss or gain statement (page 43) that are not entered in the financial statement (page 39)?
2. What information can the farmer obtain from the loss and gain statement that he can not obtain from the financial statement? What information can he obtain from the financial statement that he can not obtain from the loss and gain statement?
3. Enumerate the items which are entered as farm receipts. Is pay for labor done for others entered as a farm receipt?
4. Enumerate the items which are entered as farm expenses. Under what conditions should the cost of running an automobile be regarded as a farm expense?
5. How should the rental value of the farmhouse be estimated? Tell how you would estimate the value of food and fuel furnished the family from the farm.
6. What is meant by farm capital? Does a mortgage on the farm make any difference in the amount of farm capital?
7. A horse is bought on credit. Does the fact that the horse is not paid for make any difference in the amount of farm capital? A horse is sold on credit. Does the fact that this horse is not paid for make any difference in the amount of the farm capital?
8. Study the income statement on page 60. Does net farm profit (item 8, page 60) include all income from the farmer's labor and the total farm capital? Discuss this question for the two cases: (a) when there is no debt on the farm; (b) when there is such a debt.

9. Discuss item 13 on page 60. How does this item depend upon whether there is a debt on the farm?
10. Why is the inventory value of land not included in the inventories used in finding farm incomes?
11. Discuss the value to the practical farmer of the statement on page 61. How would you obtain these data for the average farm?
12. Discuss the extent to which it is worth while for the farmer to keep accounts with individuals (see page 64).
13. How many minutes daily do you estimate it would take for a farmer to keep a record of receipts and expenditures?
14. Endeavor to find out the amount of income which is exempt from the Federal Income Tax (*a*) for unmarried persons; (*b*) for married persons with no children. What is the additional exemption for each dependent child?
15. Discuss each of the eight items described on page 65. If a family live in a rented house, is the amount of the rental exempt? If they live in their own house, is the rental value charged as part of taxable income? Does this favor a family who live in a rented house or a family who live in their own house?
16. In a certain year a farmer adds largely to his inventory values by keeping a large amount of grains, feeds, and live stock. Discuss the effect of this upon taxable income (*a*) if the farmer is reporting on the accrual basis; (*b*) if he is reporting on the cash receipts and disbursement basis.
17. Discuss as in the preceding the effect upon taxable income of selling off a large amount of grain, feed, and live stock, thereby reducing the total inventory.
18. If prices of farm property other than real estate change greatly during the year so as to increase or decrease inventory values, how does this affect taxable income (*a*) if reporting on accrual basis; (*b*) on cash basis?
19. State fully how to compute taxable income if reporting on the accrual basis.
20. State fully how to compute taxable income if reporting on the cash receipts and disbursement basis.
21. Describe the process of changing from the cash basis to the accrual basis.
22. Which of the two bases of reporting taxable income will give the more accurate representation of the real income?

PART III

COST ACCOUNTING

51. Purposes of cost accounting. — The accounts which have already been studied in this book furnish the farmer complete information about how much he is making on his business as a whole, but fail to furnish certain other information which is important in managing a farm.

The farmer may be losing money raising wheat when he could make money raising corn. His work may be so arranged that an unnecessarily large number of hours' labor is required for certain operations; he may be losing money by selling his hogs or beef cattle too young or by keeping them too long. The information contained in a set of cost accounts will enable the farmer to correct such mistakes and thereby to increase considerably the income from his farm.

The following are the chief purposes of cost accounting:

1. To ascertain the net loss or gain from each separate farm enterprise.
2. To ascertain the amount of labor by men, horses, and equipment required for each farm operation.
3. To ascertain the amount of material required for various enterprises, such as seed and fertilizer needed for different field crops, and the amount of feed required for different kinds of farm animals.
4. To find how much of the time men, horses, and equipment are idle because there is nothing for them to do.

When these facts are known, the farmer will be in a position to study the management of his farm more intelligently and to make such changes as will make the farm more profitable. This will appear more clearly as we proceed with the study of cost accounting.

52. Farm map. — One of the first steps in starting a set of cost accounts is to make a map of the farm. The main purposes to be kept in mind in making such a map are :

1. The map should be drawn to scale, and the dimensions and area of each field should be shown on the map in writing.
2. It should show the purpose for which each field is being used for the current year.
3. It should show whether the division lines are fenced or not and the kind of fence used.
4. The location of drains and main irrigation ditches (if any) should be shown. Particular care should be taken to locate drainage lines accurately so they may be found without trouble in case repairs are needed.

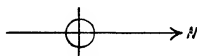
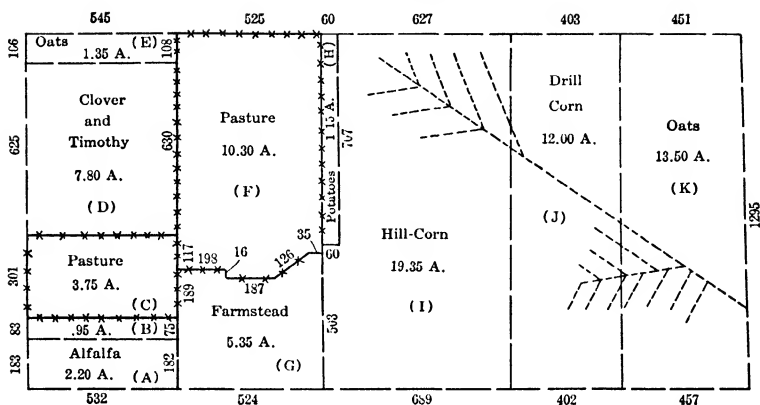
Monuments should be placed in the ground to indicate important points. A piece of gas pipe or a large bolt set in a concrete block forms a good monument. Wooden stakes should not be used, since they are certain to be removed. Care should be taken to locate monuments so they will not be disturbed by the working of the fields.

53. Finding the areas of fields. — It is now customary to measure lengths in feet instead of rods or chains. Areas in acres are found by dividing the number of square feet by 43,560, the number of square feet in an acre.

The area of a rectangle is found by multiplying the length by the width. The area of a four-sided figure two of whose sides are parallel (a trapezoid) is found by multiplying half the sum of the parallel sides by the perpendicular distance between them.

In some cases the field may be divided into triangles whose area may be found by taking one half the product of the base and altitude or by using the formula $\sqrt{s(s-a)(s-b)(s-c)}$, where s represents half the sum of the sides and a , b , c , the three sides, respectively. Books on surveying give further information on making maps and finding the areas of fields.

A FARM MAP



LEGEND

- — — — — Field Division
- x — x — x — Wire Fence
- - - - - Drains

Scale 1 inch = 650 feet

Total Area 77.70 Acres

Farmstead 5.35 Acres

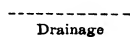
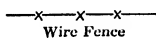
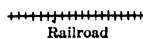
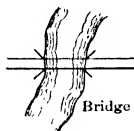
Crop and Pasture 72.35 Acres

Dimensions on map are given in feet

SYMBOLS USED ON MAPS



Property or Field
Line not fenced



54. What accounts are usually kept. — For the purpose of cost accounting the farming business is considered as made up of separate departments or enterprises, and a complete account is kept with each department. A farmer who raises oats, wheat, corn, barley, hay, cattle, hogs, and poultry will keep an account with each of these. He will also keep accounts with Labor, Horses, Land, Buildings, Equipment, Interest, General Farm, Personal, and Inventory. He may keep an account with Supplies, or he may keep a separate account with each class of products until they are finally disposed of. Certain other accounts may be kept which will be noted later.

A farmer raising corn in two or more fields may keep a separate account for each field, such as Corn in Field C, Corn in Field D, or he may keep one account with Corn in Fields C and D. If the two fields are of the same quality, both as regards fertility and convenience of working, one account may be sufficient, while under different conditions separate accounts may be highly important.

In general, the different accounts to be kept depend on the character of the farming and the information which the farmer wishes to obtain from his books (see section 81).

55. Elements that constitute cost. — To gain an idea of the elements of cost which must be charged against an account, consider an enterprise such as raising corn in a 60-acre field (see page 77). The account must be charged with the rental value of the land used (see section 70), with the value of manure used (see section 18), with seed, and with twine. It must also be charged with the cost of all labor performed on it by men and horses and with the cost of the use of equipment. In some cases a certain amount of interest is charged (see section 89). To find the cost per hour of labor by men and horses and the cost of using equipment, certain records and accounts must be kept which will be considered later.

ENTERPRISE: RAISING CORN IN FIELD C (AREA 60 A.)

Operation	Costs		
	Time and Cost per Hour	Cost	
	Rent, 60 acres @ \$12		\$720 00
	Manure, 40% of \$160		64 00
	Seed, 88 bu. @ \$2.10		184 80
	Twine, 49 lb. @ 17¢		8 33
	LABOR COSTS		
Operation	Time and Cost per Hour	Cost	
Plowing	Man-hours 200 @ 25¢	50 00	
	Horse-hours 600 @ 15¢	90 00	
	Equipment-hours 600 @ 3¢	18 00	158 00
Harrowing and Packing	Man-hours 125 @ 25¢	31 25	
	Horse-hours 250 @ 15¢	37 50	
	Equipment-hours 250 @ 3¢	7 50	76 25
Planting	Man-hours 52 @ 25¢	13 00	
	Horse-hours 104 @ 15¢	15 60	
	Equipment-hours 104 @ 3¢	3 12	31 72
Cultivating four times	Man-hours 284 @ 25¢	71 00	
	Horse-hours 568 @ 15¢	85 20	
	Equipment-hours 568 @ 3¢	17 04	173 24
Cutting with Corn binder	Man-hours 108 @ 25¢	27 00	
	Horse-hours 324 @ 15¢	48 60	
	Equipment-hours 324 @ 3¢	9 72	85 32
Hauling bundled corn to barn	Man-hours 170 @ 25¢	42 50	
	Horse-hours 170 @ 15¢	25 50	
	Equipment-hours 170 @ 3¢	5 10	73 10
Husking	Man-hours 400 @ 25¢		100 00
Total cost			\$1674 76
	RECEIPTS		
	Total yield, 2820 bu. @ 93¢		2622 60
	Corn fodder, estimated value		180 00
	Total value of crop		2802 60
	NET GAIN		
Interest at 7% on \$400 for 6 months			11 27 84
Net gain less interest			14 00
			1113 84

For proper form of an account see pages 78-79. The above form is used here for the convenience of printing.

For meaning of equipment-hour see section 67.

RAISING HAY IN FIELD C

CHARGES

Feb. 28	131 hours man-labor @ 23¢	\$ 30 13
	163 hours horse-labor @ 14¢	22 82
	163 hours equipment-use @ 4¢	6 52
	Use of land, \$8 per acre	288 00
	Manure, value used	46 50
	General farm expenses	4 70
		398 67
	Gain	34 93
		433 60

56. Form of an account. — The proper form of an account is shown above. On the left side of the account are charged all the items of expense, while all receipts or credits are entered on the right side. The account with hay, shown above, is charged with the cost of labor of men and horses, with the use of equipment and land, and with the value of the manure used.

It is credited with the hay produced and the pasture value of the hay field after the hay is cut. Finally a gain is entered on the left side just sufficient to make the two sides balance exactly. The account is then ruled as shown and is said to be closed.

If the expenses had been greater than the receipts, a loss would be entered on the right side sufficient to balance the account.

Note that labor of men, horses, and equipment is not entered separately for different operations such as cutting, hauling, etc., but that the total man-labor is entered as one item, as is the horse-labor and the use of equipment (compare page 77). This serves to shorten the account. The total number of hours of labor by men and horses and the number of hours' use of equipment are obtained from separate labor records (see pages 80-83).

The total yield of hay is estimated as closely as may be at the time it is harvested, and the pasture value is not determined until the end of the year.

AREA 36 A.		YEAR 1921-22	RECEIPTS
July 11	51½ T. hay @ \$8.00		\$412 00
Feb. 28	Pasture		21 60
			<hr/>
			433 60

EXERCISE

Enter the following data as an account with Raising Corn in Field E.

Plowing: 114 man-hours, 312 horse-hours, 312 hr. equipment-use.

Harrowing: 31 man-hours, 124 horse-hours, 124 hr. equipment-use.

Planting: 68 man-hours, 136 horse-hours, 136 hr. equipment-use.

Cultivating: 175 man-hours, 350 horse-hours, 350 hr. equipment-use.

Cutting and shocking: 291 man-hours.

Hauling: 140 man-hours, 140 horse-hours, 140 hr. equipment-use.

Husking: 203 man-hours.

Other expenses: Rent, 29 acres at \$6.00 per acre; 43½ bu. seed corn at \$1.65; manure, value used, \$36.50; general farm expense, \$8.60.

Receipts: 1840 bu. corn at \$1.16 per bushel; corn fodder, estimated at \$87.00; pasture valued at \$24.00.

Use 36.4¢ as the cost of a man-hour, 19.3¢ as the cost of a horse-hour, and 7.8¢ as the cost of an equipment-hour.

Find the total number of hours man-labor, horse-labor, and equipment-use. Complete the account as shown on these pages.

TOPICS FOR STUDY AND DISCUSSION

1. Enumerate the elements that constitute costs in an enterprise such as raising wheat. If a man owns his farm, is rent of land to be charged as a part of the cost of raising corn? Why? What elements constitute the income from such an enterprise?
2. Describe the form of an account. On which side are charges entered? credits? If there is a gain, on which side is it entered? On which side is a loss entered?

LABOR RECORD

PREPARING SEED				PLOWING				HARROWING			
Date		M	H	Date		M	H	Date		M	H
4/3		4	0	4/5		8	24	4/11		8	24
Total		4	0	4/6		16	48	4/13		16	48
				4/7		16	48	4/14		6	18
Threshing (in Field)				4/8		8	24	Total		30	90
8/29		34	42	4/10		16	48				
Total		34	42	4/11		8	24				
				4/12		16	48				
				Total		88	264				

57. Labor record. — A separate labor record in the form shown on these pages is kept for each account against which labor is charged. The date is written in the first of the four spaces in each column. The number of hours man-labor is written in the third space and the number of hours horse-labor in the fourth space. The second space, which is blank in the record above, is used for tractor work or other special work. In case a more detailed description of certain work is desired each entry may be written across two columns or more (see pages 82, 151, 152, 154, 156, 157). In the record shown here the work of raising wheat has been entered under the separate operations of preparing seed, plowing, harrowing, seeding, cutting, and threshing. This record shows not only the total number of hours' work on the wheat, but also the amount of work done on each separate operation.

At the time the labor record is started, the different operations about which information is desired should be decided upon and each started in a separate column as shown above. As soon as it is known that all work on a certain operation has been completed, the total for it may be put down and another operation started in the same column. In some cases certain work may be placed in a column headed miscellaneous.

RAISING WHEAT IN FIELD B

SEEDING				CUTTING				SUMMARY		
Date		M	H	Date		M	H	Operation	M	H
4/14		8	16	7/29		6	24	Preparing seed	4	0
4/15		8	16	7/30		8	32	Plowing	88	264
4/17		8	16	8/1		4	16	Harrowing	30	90
4/18		4	8	8/2		4	16	Seeding	31	62
4/19		3	6	8/3		2	8	Cutting	24	96
Total		31	62	Total		24	96	Threshing	34	42
								Total	211	554

EXERCISE

Following are data for the labor record for raising oats in a certain field. Enter these as a labor record in the Cost Account Book. Put plowing and disking in the first column, leveling and drilling in the second, harrowing and also cleaning seed in the third, cutting in the fourth, shocking, threshing, and the summary in columns not completely filled. Follow the model given on this and the opposite page.

May 20. Plowing and disking 6, 36 (6, 36 indicates 6 man-hours and 36 horse-hours); leveling and drilling, 3, 12.

May 21. Plowing and disking, 9, 36; harrowing, 4, 16.

May 22. Plowing and disking, 4, 16; leveling and drilling, 8, 32.

May 23. Leveling and drilling, 2, 8.

May 29. Plowing and disking, 4, 28.

May 30. Plowing and disking, 4, 28.

May 31. Harrowing, 3, 12.

June 4. Cleaning seed, 2, 0.

June 6. Plowing and disking, 13, 52.

June 8. Plowing and disking, 5, 20; leveling and drilling, 6, 24.

June 9. Leveling and drilling, 1, 4.

Sept. 1. Cutting, 4, 12.

Sept. 4. Cutting, 3, 9; shocking, 2, 0.

Sept. 5. Shocking, 7, 0.

Sept. 8. Cutting, 9, 27; shocking, 18, 0.

Sept. 11. Cutting, 8, 24; shocking, 8, 0.

Sept. 12. Shocking, 4, 0.

Oct. 2. Threshing, 71, 89.

LABOR RECORD

CHORES								HAULING FEED			
Dates			Days	Hours per Day		Total Hours		Date		M	H
				M	H	M	H				
1/1	to	1/31	31	1 $\frac{1}{4}$	0	38 $\frac{3}{4}$	0	1/4		8	8
2/1	to	2/28	28	1 $\frac{1}{4}$	0	35	0	2/7		2	4
3/1	to	3/31	31	1 $\frac{1}{2}$	0	46 $\frac{1}{2}$	0	2/21		2	4
4/1	to	4/19	19	1 $\frac{3}{4}$	0	33 $\frac{1}{4}$	0	3/12		3	3
4/20	to	4/30	11	2	0	22	0	4/6		4	4
5/1	to	5/31	31	2	0	62	0				
6/1	to	6/6	6	2	0	12	0				
6/7	to	6/30	24	1 $\frac{1}{2}$	0	36	0				

58. Labor record for farm animals. — On these pages is shown part of a year's labor record for horses. This record is entered on the standard labor record blanks provided in the set of account books accompanying this text. After a little careful observation the time consumed daily in doing chores for each group of animals may be estimated closely enough for practical purposes. In this case it is found that, at the beginning of January, chores on horses amount to $1\frac{1}{4}$ hr. daily. This is then put down in the following form:

1/1	to			$1\frac{1}{4}$	0		
-----	----	--	--	----------------	---	--	--

It is found that chores on horses continued at $1\frac{1}{4}$ hours a day throughout January, and on the last day of the month the record is completed as shown in the record above. In this manner the chores for one month are recorded in one line. If it is found at some time during a month that the number of hours per day needed to do the chores for horses is changed the record begun at the beginning of the month is completed and a new record started, as is the case in the month of April in the record shown above.

HORSES

SPECIAL WORK				SPECIAL WORK (Continued)							
Date		M	H	Date		M	H				
1/9		4	0	4/6		2	0				
1/21		1	0	4/21		3	0				
1/30		2½	0								
2/6		2	0								
2/18		1	0								
2/23		1½	0								
3/2		3	3								
3/7		4	0								
3/18		1	0								

When special work is done, this is entered in a separate column. In the record shown on these pages hauling feed is also put in a special column.

Records similar to this one should be kept for cattle, hogs, and poultry. In many cases separate accounts and hence separate labor records are kept for beef cattle and dairy cattle.

EXERCISE

Following is the record of labor on a large herd of dairy cattle running from April 19, 1921 to April 18, 1922. Enter as a formal record in the Cost Account Book. It should be noted that this farmer kept an informal record with the time used for hauling milk and feed and entered the totals each month. He did, however, make one or two separate entries of such work. Put hauling milk in a separate column.

April 19. Chores: 10 man-hours daily.

April 22. Hauling hay, 6, 12; hauling sawdust, 15, 30.

April 19-30. Hauling milk, 12, 12.

May 1. Chores: 10 man-hours daily.

May 25. Cleaning barn, 2.

Hauling milk in May, 31, 31.

June 1. Chores: 10 man-hours daily.

June 27. Trip for beets, 3½, 7.

July 1. Chores: 10 man-hours daily. Hauling feed 3, 6.

July 6. Skinning calf, 1.

- July 27.* Cleaning barn, 3; hauling feed and sawdust, 12, 24.
Hauling milk in July, 31, 31; hauling feed and sawdust, 14½, 29.
Aug. 1. Chores: 10 man-hours daily.
Sept. 1. Chores: 10 man-hours daily.
Hauling feed in September, 21, 30½; hauling milk, 30, 30.
Oct. 1. Chores: 14 man-hours daily.
Oct. 17. Special work in barn, 6, 0.
Oct. 28. Hauling beets, 14, 22.
Hauling feed in October, 14, 28; hauling milk, 31, 31.
Nov. 1. Chores: 14 man-hours daily.
Nov. 10. Looking up milking machine, 10.
Nov. 16. Working on milking machine, 6, 4.
Hauling feed in November, 16, 32; hauling milk, 30, 30.
Dec. 1. Chores: 16 man-hours daily.
Hauling feed in December, 17½, 35; hauling milk, 31, 31; whitewashing barn, 25.
Jan. 1. Chores: 14 man-hours daily.
Hauling milk in January, 31, 31; hauling sawdust, 2½, 5; whitewashing barn, 22.
Feb. 1. Chores: 14 man-hours daily.
Hauling milk in February, 28, 28; hauling feed, 10, 20.
Mar. 1. Chores: 14 man-hours daily.
Hauling milk in March, 31, 31; hauling feed, 17, 32.
April. Chores: 10 man-hours daily.
Hauling milk (April 1 to April 18), 18, 18.

TOPICS FOR STUDY AND DISCUSSION

1. If a farmer has one or two men working for him, will it be necessary to have each man keep a daily record of his work, or will the farmer know at the end of the day what each man has done? Remember that it is very important to keep the accounts in the easiest way. It is always important to avoid trouble by thinking out the best way to do one's work.
2. Could work such as hauling feed be entered directly into the work record as a special operation? Compare the labor records on grains on pages 80-81. Would this involve any more trouble than keeping an informal record to be summarized and entered into the regular labor record at the end of the month?
3. How much time daily should it require to keep the work records on a medium-sized farm?

59. Labor record for buildings and land. — Separate accounts are usually kept with Buildings and with Land, and in this case a separate labor record is kept for each of these (see page 104). Work on all farm buildings, including the farmer's dwelling, should be charged to Buildings. Work on all farm improvements other than buildings, such as repairing fences or drains, should be charged to Land. If an extensive piece of work, such as building a new silo or a new house, is undertaken, it may be given a separate column in the Buildings labor record, or an entirely separate account may be arranged (see section 69).

60. Labor record for general farm. — There are certain kinds of work that do not come under any of the heads thus far specified. A farmer has a note due at the bank and goes to town to renew it. He believes his farm is given too high value by the assessor and takes time to try to get his tax reduced. Such instances will help to indicate what items should be entered in the General Farm labor record. The character of each item of such work should be described.

An item should be put in the General Farm labor record only when it is clear that it can not reasonably be put into one of the special records. There is a tendency in practical farm accounting to enter items under General Farm which should be entered under the more special accounts. Effort should be made to keep the General Farm account as small as possible.

61. Labor record for personal. — It is important that a labor record for Personal be kept, since such labor must be kept separate and not charged to the operation of the farm. Under this head should be included such personal work as taking children to school on a bad day or going to town for groceries. Working in the garden or orchard (in case these are small and kept mainly for family use) should be charged to Personal (see section 72).

Work in preparing farm products for home consumption after they have been brought into standard condition for market should be charged to Personal. Thus, slaughtering animals for home use should be charged to Personal.

TOPICS FOR STUDY AND DISCUSSION

1. Discuss the value to the farmer of knowing how much he makes or loses on each of his various kinds of farm products.
2. Why should the farmer know the amount of labor and feed required to keep a certain number of dairy cows?
3. By keeping records a farmer finds that his work horses are used on an average only $3\frac{1}{2}$ hours each working day of the year. Would it be more profitable for this farmer if he could so arrange his farming business that each horse would be used on an average 6 hours a day?
4. Discuss the importance of an accurate farm map showing, for instance, the exact location of drainage pipes.
5. Discuss various methods of finding the areas of fields. Consider the practical difficulty of finding the altitude of a triangle. Is there any practical difficulty in finding the lengths of the sides of a triangle? What formula would you use to find the area of a triangle when you know its sides?
6. A farmer is raising chickens and selling eggs. Enumerate the various items of cost which he must charge in his account with chickens. What items will be credited in this account?
7. On which side of an account are the charges entered? On which side are the credits entered?
8. When all the charges and credits have been entered in an account how is the gain or loss found?
9. Study the Labor Record on pages 80-81. Note the four columns for each operation. What is entered in the first column? in the third? in the fourth?
10. What is meant by the "distributed" labor record? Into what operations is the raising of wheat divided, as shown on pages 80-81? At what time is each item entered into the Labor Record?
11. Read the first line under chores in the Labor Record on pages 82-83. What is the meaning of this line? At what time is each part of the line entered?

12. Explain fully the fourth and fifth lines of this record. At what time are the various parts of these lines entered?
13. How much time do you estimate it would require each month to keep the labor record on a good-sized farm for chores on horses, dairy cattle, beef cattle, chickens, and hogs?
14. What work should be entered in the labor record for Buildings? Should building fences be put into this record?
15. What work should be entered in the labor record for Land? Should work on a road be put into this record? on a drain? on a drinking place for cattle in the pasture?
16. Name some kinds of work that you would enter into the labor record for General Farm.
17. Name several kinds of work that you would put into the labor record for Personal. If a farmer takes a team and goes fishing, how would you enter the work of the team? Would you regard the farmer as idle or as working for Personal?

PROJECTS

1. Make a complete list of the projects on your home farm with which you would keep separate cost accounts. What information would you get from each account?
2. Under what distinct operations would you enter the labor on a field of corn? Study in detail several enterprises or departments on your home farm with a view to deciding the different operations under which labor should be entered for each enterprise or department. Make as complete a list of operations as you can for each of the labor records required on your home farm.

CROP ACCOUNT

All data in connection with the growing and harvesting of 16.6 acres of oats on a New York farm in 1919 are given below. In the Cost Account Book enter a complete labor record and also a complete account. First charge the account with the inventory value of the fall plowing.

April 10. Inventory: Fall plowing: 120 man-hours @ 34.67¢; 272 horse-hours @ 28.7¢; 272 equipment-hours @ 7.9¢.

April 11. Bought formaldehyde, 60¢. Attending farm demonstration, 3 (3 indicates 3 hours man-labor).

April 22. Harrowing, 7, 14.

April 25. Used 1 T. acid phosphate, \$25.50. Harrowing, 6, 12; seeding, 10, 20.

- April 30.* Used 1500 lb. acid phosphate, \$19.12. Harrowing, 4, 8.
May 3. Used 54 bu. seed, \$40.50. Harrowing, 8, 16; seeding, 12, 18.
May 6. Used 1 T. acid phosphate, \$25.50. Seeding, 4, 8.
May 15. Harrowing, 6, 12; seeding, 6, 12.
May 16. Smoothing and picking stone, 5, 10.
Aug. 4. Bought 45 lb. twine, \$11.25. Cutting around field, 10; cutting oats, 2, 6.
Aug. 8. Cutting, 2, 6; shocking, 4.
Aug. 9. Shocking, 3.
Aug. 11. Cutting 3, 9; shocking, 9.
Aug. 12. Cutting, 4, 12; shocking, 8.
Aug. 13. Cutting, 4, 12; shocking, 8; cutting around field, 3.
Aug. 14. Cutting, 4, 12; shocking, 10.
Aug. 16. Shocking, 6.
Aug. 21. Turning out shocks and setting up, 4.
Aug. 22. Hauling, 10, 20.
Aug. 23. Hauling, 10, 20.
Aug. 24. Turning out shocks, 4.
Aug. 25. Turning out shocks, 8; hauling, 8, 16.
Aug. 29. Turning out shocks, 10; hauling, 10, 20.
Sept. 1. Turning out shocks, 10; hauling, 10, 20.
Sept. 2. Turning out shocks, 7; hauling, 7, 14.
Sept. 6. Threshing, 48; charges for threshing, \$22.20; meals for threshers, \$2.00.
Oct. 4. Sold 10 bu. oats, \$7.50.

The remainder of the crop was disposed of as follows: 190 bu. oats to horses, \$190; 237½ bu. to inventory, \$237.50; 600 lb. straw to horses, \$3.80; 300 lb. straw to colts, \$1.80; 4260 lb. straw to cows, \$25.56; 660 lb. straw to heifers, \$3.06; 8000 lb. straw to inventory, \$48.

The following additional charges were made against the oats: Share of fire insurance chargeable to oats, 42¢; 8977 lb. lime valued at \$33.78; 77 tons manure valued at \$137.39; interest on all costs except for the use of land and buildings, \$19.20; use of buildings, \$18; use of land, \$7 per acre.

At the end of the year it was found that the labor costs were as follows: man-labor, 34.7¢ per hour; horse-labor, 28.7¢ per hour; equipment-use, 7.9¢ per hour. The number of hours equipment-use is the same as the number of hours horse-labor (see section 67).

Find the gain or loss, and close the account. For model see pages 78-79.

62. Accounts with dairy. — The first step in starting the account is to charge it with the inventory value of all its animals and with any unconsumed feed that may have been charged to them. In some cases dairy equipment is also carried in this account. Every item of expense on account of dairy is then charged to the account and every item of income from dairy is credited. Under expense must be included the value of all feeds whether purchased or produced on the farm. At the end of the year the account is charged with the cost of labor, with rent for the buildings used, with pasture, interest, taxes, General Farm (see section 71), and any other expense. The account (to be posted) on pages 91 to 94 will bring out all items to be entered.

63. Feed record. — The amount of feed used for the various groups of animals may be determined in several different ways. The simplest method is to estimate the totals at the time the inventories are taken. Thus, hay may be fed from the same mows to horses, dairy cattle, and beef cattle. The inventory at the beginning and end of the year, together with the amount produced or bought during the year and the amount sold, will determine the total amount fed. The amount fed to each group is estimated by considering the number of animals in each group and the length of time the group was fed.

If this method is used, no separate feed record is kept, and the total value of the feed is charged directly to the animal accounts when the estimates are made. There is, however, considerable difficulty in estimating the relative amounts fed to the various groups unless more detailed records are kept. Thus, horses may be fed a few days when they are worked and then turned out to pasture for a day or for many days when they are not worked. Some animals may be on part pasture and part feed, while other animals are on full feed or full pasture.

Another method, frequently used where cost accounts are kept, is to sequester certain amounts of feed for each group. Thus, the hay to be fed to horses, dairy cattle, and beef cattle may be put in different mows at the time it is put into the barn, or they may be fed from different stacks. Similar arrangements may be made with other feeds such as corn, oats, and ground feeds.

Again, feed may be set aside for each group from month to month or at other intervals of time. If this last method is used, the value assigned to each feed should be its farm value at the time it is set aside for the particular group. In case either of the other methods is used the value should be the same as that at which the feed is entered into the Supplies Account.

In case there is a large number of different items of feed to be entered during the year a separate feed record should be kept. Feed purchased and feed set aside from the Supplies Account should be entered in separate columns; for if this is done, the total set aside from Supplies may be credited to Supplies in one lump sum instead of in many separate items. If a Cash Account is kept, the total cost of purchased feed may likewise be entered as one item into the Cash Account. In this case care must of course be taken not to include in the Cash Account feeds bought on credit (see section 77).

64. Sales record. — If a large number of sales are made from poultry or from dairy, a separate sales record may be kept. In such a record different products should be entered in different columns if it is desired to know how much of each is sold. Thus, milk may be entered in one column and miscellaneous sales in another; eggs may be entered in one and chickens in another. Similar records may be kept with farm products used in the household (see page 161).

The ledger form is used for such records. Each side of the record on page 91 shows how one page of the ledger may be used.

FEED RECORD FOR DAIRY

FEED PURCHASED			FEED SET ASIDE FROM SUPPLIES		
Date	Amount and Kind	Value	Date	Amount and Kind	Value
6/3	600 lb. molasses feed	\$ 8 50	4/22	13 T. oat hay	\$ 60 34
7/31	1900 lb. hominy	28 50	4/22	45 T. corn silage	202 50

FORM OF SALES RECORD FOR DAIRY

MILK				MISCELLANEOUS		
Date	Amount	Price	Value	Date	Product Sold	Value
5/10	3706 lb.	\$1.25 cwt.	\$46 32	5/26	Cow	\$118 75
5/25	3483 lb.	1.30 cwt.	45 27	5/28	Calf skin	1 10

EXERCISE

From the data given below enter a feed record on a page of ledger form in the Cost Account Book.

Post sales record, using another page of the same book.

Then post the remaining items into an account, using two pages of the Cost Account Book. The items involving labor for this account were given on pages 83-84 and have already been entered in a labor record. They are omitted from the data given here. Read final directions on page 94.

ACCOUNT WITH DAIRY HERD

April 19, 1919. Inventory: 19 cows, \$4425; 11 heifers more than 1 yr. old, \$2600; 5 heifers less than 1 yr. old, \$650; 1 bull, \$300; 1 bull calf, \$40.

April 22. Bought 26 T. sawdust, \$58.36. Transferred to Cows: 5.3 T. oat hay, \$60.34; 45 T. corn silage @ \$4.50; 190 bu. oats, \$108.16; 35 bu. corn, \$18.75; 2 T. corn fodder, \$16.00.

April 25. Paid registration fee, \$2.00.

May 10. Received for 3706 lb. milk, \$46.32.

May 18. Received for calf skin, \$1.10.

May 25. Received for 3483 lb. milk, \$45.27.

May 26. Sold cow, \$118.75.

June 1. Paid veterinarian, \$5.00; received back pay on milk, 82¢.

- June 3.* Paid: for 600 lb. molasses feed, \$8.50; grinding bill, 80¢.
June 10. Received for 3833 lb. milk, \$40.82.
June 25. Received for 3109 lb. milk, \$40.41.
June 26. Paid for drugs, 40¢.
June 27. 20 bu. beets used by cows, \$6.00.
July 2. Paid: for 1 gal. acid, 43¢; insurance against fire and lightning, \$50; 3 boxes of fly paper, 90¢; drugs, 40¢.
July 6. Sold calf skin, \$1.10; sold feed from cattle, \$1.53.
July 15. Received for 3399 lb. milk, \$44.18.
July 25. Received for 4398 lb. milk, \$59.37.
July 27. Paid for testing cows, \$6.50.
July 31. Paid: for 1900 lb. hominy, \$28.50; 1100 lb. bran, \$16.50; 1300 lb. distillers' grain, \$14.95.
Aug. 12. Received for 6292 lb. milk, \$84.94.
Aug. 29. Received for 4934 lb. milk, \$69.07.
Aug. 30. Sold bull calf (inventoried at \$40) for beef, \$17.90.
Sept. 5. Paid: advertisement, \$6.50; registration fees, \$4.
Sept. 7. Paid for drugs, \$2.25.
Sept. 12. Received for 5005 lb. milk, \$75.07.
Sept. 25. Received for 3977 lb. milk, \$63.63.
Sept. 29. Paid: veterinary fee, \$5.00; 1200 lb. Kent feed, \$18.65; 1082 lb. corn meal, \$16.00; 3133 lb. feed, \$44.28; 1500 lb. Boston feed, \$22.50.
Oct. 7. Sold cow and calf, \$200.00. Paid for bull, \$300.
Oct. 8. Paid for registering calf, \$1.00.
Oct. 10. Paid veterinarian, \$15. Received for 3917 lb. milk, \$62.67.
Oct. 14. Paid: for drugs, \$1.40; 640 lb. oats, \$11.00; grinding oats, 64¢.
Oct. 21. Sold calf skin, \$1.00.
Oct. 25. Received for 5042 lb. milk, \$85.71.
Oct. 28. Bought 8875 lb. beets, \$44.38.
Oct. 31. Paid: for 1500 lb. hominy, \$22.50; 4000 lb. Columbia feed, \$66.00; 869 lb. buckwheat middlings, \$14.34; 1000 lb. molasses cake, \$13.75; 8100 lb. oil meal, \$144.95.
Nov. 9. Charge Cows: 2280 lb. ground oats, \$39.56; grinding oats, \$1.48.
Nov. 10. Received for 8357 lb. milk, \$142.06.
Nov. 11. Bought milking machine, \$101.80.
Nov. 17. Paid: advertisement, \$6.50; service fees, \$40.

Nov. 25. Received for 8509 lb. milk, \$153.16. Paid registration fee, \$2.50.

Nov. 30. Paid: for milking machine supplies, \$15.28; 9000 lb. cottonseed meal, \$133.85; 340 lb. salt, \$1.70; 11,590 lb. distillers' dried grain, \$189.93.

Dec. 8. Paid freight on tread, \$6.18.

Dec. 10. Received for 7427 lb. milk, \$133.68; charge cows 1600 lb. oats, \$28.80.

Dec. 12. Paid: testing bill, \$70.00; tread, \$65.00.

Dec. 22. Paid for milk tubes, medicine, etc., \$5.95.

Dec. 24. Paid veterinarian, \$15.50.

Dec. 25. Received for 6918 lb. milk, \$131.44.

Dec. 30. Paid: for 8533 lb. Hector feed, \$147.17; 2500 lb. wheat feed, \$38.90; 9000 lb. bran, \$127.80.

Jan. 9. Received for 2 calves, \$32.44.

Jan. 11. Paid advertisement, \$13.00.

Jan. 12. Received for 7787 lb. milk, \$147.95.

Jan. 20. Set aside from Supplies 800 lb. oats, \$14.40.

Jan. 25. Received for 7911 lb. milk, \$142.39.

Jan. 30. Set aside from Supplies: 15 T. oat hay, \$180; 2050 lb. wheat middlings, \$32.50; 1½ T. rye straw, \$13.50.

Feb. 10. Received for 9003 lb. milk, \$157.55.

Feb. 22. Set aside from Supplies 800 lb. oats, \$14.40.

Feb. 26. Received for 8168 lb. milk, \$142.94. Paid: for 500 lb. molasses feed, \$7.00; 700 lb. oil meal, \$11.90; 125 bu. beets, \$37.50; 200 lb. Buffalo gluten, \$3.20.

Mar. 10. Received for 6555 lb. milk, \$111.60.

Mar. 17. Bought: 22,782 lb. hominy, \$340.47; 1600 lb. gluten, \$26.90; 100 lb. Red Dog, \$.65; 5½ T. hay, \$82.50.

Mar. 25. Received for 7887 lb. milk, \$126.79.

Apr. 12. Received for 8223 lb. milk, \$127.45. Milk produced April 1 to April 18, valued at \$90.07.

Besides the feed already entered Dairy was charged at the end of the year with 7453 lb. ground oats, \$122.50; 2 T. hay, \$33; 2 T. rye hay, \$20; 850 lb. corn, \$13.30; 130 T. silage, valued at \$585.

Dairy was credited with 1577 lb. milk used in the house, worth \$36.50, and with 175 T. manure, worth \$262.50. Milk fed to calves was neither credited nor charged.

Dairy was also charged with pasture, \$60.00; ice, \$10.00; use of barn, \$90.00; General Farm, \$21.60.

The inventory at the end of the year was as follows: Milking machine and tread, \$185.00; 26 cows, \$6900; 7 heifers, over 1 yr. old, \$1575; 11 heifers less than 1 yr. old, \$1175; 2 bulls, \$1200; 3 bull calves, \$50.

Interest at 6% was charged on \$9950 (average inventory), and \$45.25 for taxes was also charged. Man-labor cost 20¢ per hour, horse-labor 11¢ per hour, and equipment-use 3.3¢ per hour. The number of hours equipment-use was the same as the number of horse-hours.

In entering this account the following charges must be made:

1. The inventory value of animals at the beginning of the year.
2. All incidental expenses, such as medicines, veterinary service, testing, and registering. These charges must be made at the time the expenses are incurred.
3. The cost of all equipment purchased, such as milking machinery.
4. The value of all feed whether purchased or produced on the farm.
5. The cost of labor by men and horses and of the use of equipment.
6. Other charges indicated above.

The following credits must be entered:

1. The total value of all sales.
2. The value of dairy products used in house.
3. The value of manure produced by the herd.
4. The total inventory value at the end of the year.

The number of hours' labor by men and horses and the number of hours' use of equipment are obtained from the Labor Record (see pages 83-84).

The total value of the sales is taken from the sales record and the total value of feed from the feed record.

After all the items have been entered, close the account as shown on pages 78-79.

65. Labor account. — There is a special Labor Account to which is charged the cost of all labor done in the farming business. This cost includes wages of hired "hands" and the cost of feeding and housing them. These items should be charged at the time the payments are made. The farmer should also charge this account with the value of his own labor and the value of unpaid labor on the farm by members of his own family. The farmer's own labor should be rated at the wages of a farm hand of about equal ability as a *farm hand* together with the cost of board of such a laborer.

The farmer's compensation for his work as a manager must come from the net profits of the farming operations. Work done by horses for Labor should be charged, as should also the cost of the use of equipment.

The cost per hour of horse-labor and equipment-use must be estimated for the purpose of finding the total cost of labor, since these can not be computed finally until the cost of an hour of man-labor is known. The cost of one horse-hour can be estimated very closely by noting the total charge to Horses, including a rough estimate of the cost of man-labor and equipment-use for horses and also the total number of horse-hours not including the number of hours which horses worked for horses. In a similar manner the cost per hour of equipment-use may be estimated quite closely.

Work done by men for Labor should not be charged to the Labor Account, though a record showing such labor may be kept since it contains information that may be of value. Wages paid to a house servant are a part of the family expenses and not a farm expense and hence should not be charged to the Labor Account. Nor should the cost of food and lodging for such a servant be so charged.

The cost per hour of man-labor is found by dividing the total cost of labor by the total of the number of hours shown in the various labor records (not including the number of hours' work done by men for Labor).

It is sometimes questioned whether or not the number of hours' man-labor charged to Personal should be excluded the same as work for Labor, but the best practice is to include them, and this has been done in the accounts in this book. (See the account with Labor on page 148.)

When the cost per hour of man-labor has been decided, the cost of the labor to be charged to each account is found by multiplying this cost by the number of hours shown in the labor record. These amounts are then credited to Labor.

If the cost per hour is carried to three or four decimal places, the balance of the Labor Account will be very slight. This balance is entered as a loss or gain, and the account is closed. Entering the Labor Account and the account with Horses for which material is given on this and the following page will serve to further clarify these points.

LABOR ACCOUNT

Following are data for the Labor Account on a 400-acre farm in Illinois for the year Feb. 1, 1919, to Jan. 31, 1920.

On the last of each month, wages for that month were paid as follows: *Feb.* \$80; *Mar.* \$80; *April* \$90; *May* \$90; *June* \$115; *July* \$115; *Aug.* \$115; *Sept.* \$100; *Oct.* \$95; *Nov.* \$83; *Dec.* \$78; *Jan.* \$86. Other charges were: Wood, \$10; potatoes, \$5; milk, 860 qt. @ 7¢; board for extra labor for the year, \$150; rent for small house, \$120; 187 hours horse-labor @ 20¢ (estimated); 187 hours equipment-use @ 10¢ (estimated). The farmer charges Labor monthly with \$80 wages and \$20 board for himself (enter this as two items at the end of the account).

The labor records for the various accounts show the following number of hours man-labor: Dairy, 2142; Beef, 927; Horses, 1121; Hogs, 692; Personal, 214; Supplies, 249; Corn (1919), 2478; Spring Wheat, 347; Oats, 103; Hay, 783; Manure, 472; Tractor, 47; Overland Car, 17; Equipment, 97; Winter Wheat (1920), 123; 1920 Corn, 317; General Farm, 232.

Enter the items of expense in an account in the Cost Account Book; find the total cost of labor; the total number of hours; the cost per hour; and finally the cost of man-labor to be charged to each account. Credit the Labor Account with these items and close the account.

This account requires considerable care, and the credit items should be entered on a separate sheet and checked before entering them into the account. If the labor rate is carried to four places, the balance of this account should be less than one dollar.

66. Account with work animals (horses). — In this account expenditures are charged the same as in the account with cattle except that horse-labor is not charged. The cost of minor appliances, such as currycombs, brushes, horse blankets, flynets, etc., should be charged to Horses, while harness should

be charged to Equipment. The cost of an hour man-labor is taken from the Labor Account, and the cost of an hour equipment-use is estimated. The total number of hours horse-labor is determined in exactly the same manner as the number of hours man-labor, except that the horse-labor on horses is omitted and the horse-labor on labor is included. The cost per hour of horse-labor and the amount to be charged to each account is found as in the case of man-labor, and the account is closed in the same manner as the Labor Account.

If at the end of the year part of the feed already charged to Horses has not been fed, the value of this feed should then be credited to the account.

ACCOUNT WITH HORSES

The following data are from the same farm and for the same year as the Labor Account given on the preceding page. In posting this account use the cost per hour of man-labor obtained in that account.

The first step is to charge the account with the inventory value at the beginning of the year. In this case no separate feed record is kept, and each item of feed is charged directly to the account.

Feb. 1. Inventory: 13 horses, \$2460; 8 young horses, \$720; 15 T. hay @ \$26; 120 bu. oats @ 65¢; 260 bu. corn @ \$1.30.

Mar. 6. Set aside for horses: 7½ T. hay @ \$28; 450 bu. corn @ \$1.30.

April 30. Sold one horse, \$225.

May 31. Paid insurance, \$12.50.

June 30. Paid service fees, \$45. Set aside: 2½ T. hay @ \$20; 240 bu. oats @ 70¢.

Aug. 17. Set aside: 980 bu. oats @ 50¢; 15 T. hay @ \$20.

Nov. 12. Set aside: 52 T. hay @ \$18; 260 bu. corn @ \$1.10.

Additional charges for year: Taxes, \$18.50; use of buildings, \$135; 1121 hours man-labor (use rate found in preceding account); 214 hours equipment-use @ 10¢ (estimated); interest 6% on \$2850, \$171. Credit Horses with 37 loads manure @ \$1.50. The labor records for the various accounts (besides the Horse Account) show the following number of hours horse-labor: Dairy, 316; Beef, 831; Hogs, 291; Personal, 106; Labor, 75; Supplies, 317; Corn (1919), 4721; Spring Wheat, 1620; Oats, 261; Hay, 812; Manure, 748; Tractor, 6; Overland Car, 2; Equipment, 18; Winter Wheat (1920), 64; Corn (1920), 436; General Farm, 211.

Jan. 31. Inventory: 15 horses, \$2650; 2 young horses, \$180; 5 young colts, \$200; supplies, \$945. Enter this inventory on the credit side of the account. To find the total cost of horses for the year, find the total charges and deduct the total already entered on the credit side. Now find the cost per hour of horse-labor, and complete the account in the same manner as the Labor Account.

67. Account with farm equipment. — On a farm devoted mostly to the production of field crops and meat animals, all machinery and tools may be kept in one account. Include only machinery used in the business of farming. The Equipment Account must be charged with the inventory value of all equipment at the beginning of the year, with all purchases of machinery, interest on average investment, insurance, charge for housing, repairs, and taxes. No charge is made to this account for the use of equipment.

The account should be credited with the inventory value at the end of the year, together with any other income from machinery, such as rent charged for loaning machines or the selling price of any that may have been disposed of.

Widely different methods are used to compute the cost of an equipment-hour. The most accurate method is to keep what amounts to a separate account with each machine.

At the opposite extreme is the crude method of dividing the total net cost by the total number of equipment-hours for the year. This method makes a day's use of a small cheap plow as expensive as a day's work of a machine costing several hundred dollars.

Still another method is the so-called unit-equipment method. According to this method, which is the method used in this book, a charge for a machine is made in proportion to the number of horses used. Harnesses are charged to the Equipment Account and therefore represented in the total equipment charge. Hence no separate charge should be made for the use of harness. The total number of unit equipment-hours is equal to the number of horse-hours, including the number of

horse-hours work on horses and excluding the number on equipment, and may therefore be found directly from the horse account. The account is credited with all equipment charges made to all accounts. The cost of man-labor and horse-labor have already been found, and hence the cost of an hour equipment-use may be found at once in the same manner.

ACCOUNT WITH EQUIPMENT

The following data are from the same farm as the preceding accounts. The account does not include tractor or car, with which separate accounts were kept.

<i>Feb. 1.</i>	<i>Inventory:</i>	\$2140.
<i>Feb. 20.</i>	Repairs, \$17.60.	Bought one set harness, \$65.80.
<i>Apr. 9.</i>	Bought gang plow \$107.50.	
<i>Apr. 15.</i>	Bought repairs, \$9.30.	
<i>June 16.</i>	Bought new mower, \$84.00.	
<i>July 14.</i>	Repairs, \$3.80.	
<i>July 23.</i>	Bought corn binder, \$310; repairs, \$21.40.	
<i>Aug. 1.</i>	Repairs, \$31.60.	Bought minor tools, \$6.20.
<i>Oct. 7.</i>	Bought new wagon, \$115.60.	
<i>Dec. 6.</i>	Repairs, \$2.90; minor tools, \$1.35.	
<i>Jan. 3.</i>	Repairs, \$41.80.	

Other charges were: horse-labor, 18 hours; man-labor, 97 hours (use costs found in preceding accounts); use of buildings, \$65; interest, 6% on \$2400, \$144; taxes, \$14.80.

The inventory value Jan. 31 was \$2560.

The number of hours equipment-use charged to each account was the same as the number of hours horse-labor (see page 97), except that in that account a charge of 18 hours was made against the Equipment Account. In this account no charge for equipment-use is made. Charge Horses with equipment-use.

The total cost of equipment is found in the same manner as the total cost of horses. Find the charges for equipment to be made to each account and balance the Equipment Account in exactly the same manner as the labor and the horse accounts.

It will be noted that in the Labor Account it was necessary to estimate the cost per hour of horse-labor and equipment-use. When we come to the Equipment Account, both of these are definitely known. It is, however, necessary to estimate charge for the use of buildings.

68. Account with grain, feeds, and supplies. — (This account will be referred to as the Supplies Account.) All farm products (except animals) which are not sold as soon as they are produced are usually charged to the Supplies Account, unless at the time their production is completed they are definitely set aside for the use of certain animal groups, in which case they are charged to these groups and not to Supplies. Thus, hay is charged to this account as soon as haying is finished, as are all grain crops as soon as they are placed in the barn or granary. Some crops still in the field may even be charged to this account. Hay in the stack should certainly be, and corn in the shock may be so charged. The enterprise which produced the crop is of course credited at the time that the crop is charged to the Supplies Account.

The value at which products are charged to the Supplies Account should be the farm value at the time the charge is made. Whenever products from this account are sold, the account should be credited at the selling price. When feed is charged to animals, it should be credited to the Supplies Account at the value at which it is charged to the animal group.

All purchased feeds should also be charged to this account, unless at the time of purchase they are definitely set aside for the use of a certain animal group, in which case they should be charged to this group. However, gasoline bought for the auto or kerosene for the tractor or truck should be charged directly to the accounts with these. Similarly, lubricating oil or spare parts for machinery should be charged directly to Equipment. Wire and posts for fencing may be charged directly to Land, though they are often charged to Supplies and finally charged to Land when used.

In case a special feed record is kept, a separate column should be given in such record to feeds transferred from Supplies. The items thus transferred should not be entered directly into the Supplies Account, but at the end of the year

the totals of all feeds transferred from Supplies to an animal group should be credited to Supplies and charged to the animal group in question. This method saves entering each item twice instead of once and also saves adding several long columns at the time of closing the books.

All work done on marketing products from the Supplies Account should be charged against it, as should all cost of storing the supplies. It should be noted that sorting products on the farm for the purpose of selling them later involves an element of speculation which may result in considerable gains or losses. Such loss or gain from speculation is shown by the loss or gain in the Supplies Account.

On large farms, the Supplies Account may be divided into several accounts such as Corn, Wheat, Hay, etc., and Supplies, but this does not affect the principles just stated.

TOPICS FOR STUDY AND DISCUSSION

1. What items are to be charged to the Labor Account? Is labor done for laborers charged to this account? Should the wages paid a house servant be charged to Labor? How is the cost per hour of farm labor determined? What items are credited to the Labor Account? Is there a loss or gain to be entered into this account? Discuss these points fully.
2. Study the Horse Account, raising questions similar to those studied in 1 in connection with the Labor Account. Is work done by horses ever charged to the Horse Account? How does the loss or gain in the value of horses enter into this account?
3. Study the Equipment Account. In what way does the depreciation of machinery enter into this account? How is the number of hours of equipment-use determined? How is the cost per hour found? What items are credited to this account? Discuss losses or gains to be entered into this account.
4. What items are charged to the Grain, Feed, and Supplies Account? What items are credited to this account? May there be a large loss or gain? What element determines this loss or gain?

ACCOUNT WITH SUPPLIES

The following data are from the same farm as the accounts given on pages 96, 97, 99, 105, of this book. In the Cost Account Book enter feed records for Dairy, Beef Cattle, Horses, and Hogs. Use ledger form for these records. Compare forms of sales records on page 161. See also page 90. Also enter the complete Supplies Account. The first step is to charge the account with the supplies on hand, as shown by the inventory. On this farm the feeds used were set aside monthly.

All items not entered into these special records should be entered directly into the Supplies Account as they occur. At the close the sums of the amounts entered into the feed records are credited to the Supplies Account.

Feb. 1, 1919. Inventory: 4150 bu. ear corn @ \$1.25; 860 bu. oats @ 67¢; 62 T. hay @ \$26; 7 T. hay @ \$21; 560 bu. wheat @ \$2.35.

Feeds set aside in February: Beef Cattle, 590 bu. corn @ \$1.30, 9 T. hay @ \$26; Dairy Cattle, 11 T. hay @ \$26; Horses, 15 T. hay @ \$26, 120 bu. oats @ 65¢, 260 bu. corn @ \$1.30; Hogs, 320 bu. corn @ \$1.30.

March 7. Hauling hay to market, 16, 32.

March 8. Sold 4½ T. hay @ \$25.50.

March 11. Sold 9 T. hay @ \$26.00.

March 12. Hauling wheat to market, 16, 32.

March 13. Sold 150 bu. wheat @ \$2.38.

Feeds set aside in March: Beef Cattle, 210 bu. corn @ \$1.28, 9½ T. hay @ \$28; Horses, 7½ T. hay @ \$28, 450 bu. corn @ \$1.30; Hogs, 165 bu. corn @ \$1.30.

April 16. Sold 52½ bu. wheat @ \$2.37; hauling wheat to market, 6, 12.

April 30. Sold 40 bu. corn @ \$1.50.

Feeds set aside in April: Beef Cattle, 263 bu. corn @ \$1.35, 120 bu. oats @ 68¢; Dairy Cattle, 30 bu. oats @ 68¢, 3½ T. hay @ \$28.

May 6. Shelling corn, 71, 98. Sold 1040 bu. corn @ \$1.48. (This corn was sold on the farm.)

May 15. Set aside for seed: 71 bu. corn @ \$1.85.

Feeds set aside in May: Beef Cattle, 315 bu. corn @ \$1.55, 6¾ T. hay @ \$28; Dairy Cattle, 1¾ T. hay @ \$28; Hogs, 290 bu. corn @ \$1.50.

June 7. Bought 260 bu. of corn @ \$1.55; hauling home corn, 12, 24.

Feeds set aside in June: Beef Cattle, 312 bu. corn @ \$1.55, 2 T. hay @ \$24.50.

July 2. Sold 356½ bu. wheat @ \$2.45; hauling wheat to market, 8, 16.

July 3. Hauling wheat to market, 16, 32.

July 5. Sold 360 bu. oats @ 64¢; hauling oats, 16, 32.

July 7. Hauling oats, 16, 32.

Feeds set aside in July: Dairy Cattle, 5 T. hay @ \$21. Charged Supplies with 117 T. hay @ \$20.

Aug. 23. Charged Supplies with 940 bu. wheat @ \$1.90; 1610 bu. oats @ 50¢.

Feeds set aside in August: Dairy Cattle, 12 T. hay @ \$20; Horses, 15 T. hay @ \$20, 980 bu. oats @ 50¢.

Feeds set aside in September: Beef Cattle, 5 T. hay @ \$20.

Sept. 28. Sold 756 bu. wheat @ \$2.35; hauling wheat, 56, 112.

Oct. 31. Charged Supplies with 2800 bu. corn @ \$1.10; 57 T. hay @ \$20.

Feeds set aside in October: Dairy Cattle, 80 bu. corn @ \$1.10; Beef Cattle, 630 bu. corn @ \$1.10; Hogs, 715 bu. corn @ \$1.10.

Nov. 30. Charged Supplies with 4260 bu. corn @ \$1.00.

Feeds set aside in November: Beef Cattle, 1720 bu. corn @ \$1.10, 11 T. hay @ \$20; Horses, 260 bu. corn @ \$1.10, 52 T. hay @ \$18; Dairy, 120 bu. corn @ \$1, 2 T. hay @ \$20.

Dec. 11. Charged Supplies with 3750 bu. corn @ \$1.15.

Dec. 13. Shelling corn, 120, 180. Paid for shelling \$68.60.

Dec. 14. Cleaning up after sheller, 2, 0.

Dec. 15. Sold 13 bu. corn @ \$1.25.

Feeds set aside in December: Dairy Cattle, 140 bu. corn @ \$1.15, 7 T. hay @ \$20; Beef Cattle, 960 bu. corn @ \$1.20; Hogs, 315 bu. corn @ \$1.15.

Jan. 6. Hauling corn to market, 16, 32.

Jan. 7. Hauling corn to market, 14, 28.

Jan. 8. Hauling corn to market, 52, 104.

Jan. 9. Sold 2870 bu. corn @ \$1.37. (Credit Supplies)

Feeds set aside in January: Beef Cattle, 4 T. hay @ \$21, 210 bu. corn @ \$1.25; Dairy Cattle, 125 bu. corn @ \$1.25, 3 T. hay @ \$21; Hogs, 390 bu. corn @ \$1.25.

Jan. 31, 1920. Inventory: 51 T. hay @ \$20; 1930 bu. corn @ \$1.30; 640 bu. oats @ 65¢; 170 bu. wheat @ \$2.40. Cost of labor, horses, and equipment was the same as in the accounts on pages 103, 105.

Charge Supplies with \$45 for the use of buildings and 6% of \$2500 for interest.

69. Account with farm buildings. — The account with Buildings is charged with the inventory value at the beginning of the year of all farm buildings including the farmer's dwelling. Taxes, interest, insurance, repairs, replacements, as well as new construction of buildings, are charged to this account.

On the credit side of the account with Buildings is entered first the inventory value of the buildings at the end of the year. The amount necessary to balance this account is then divided among the various elements using buildings, in proportion to the inventory value of the quarters they occupy. Suppose it is found that the yearly cost of buildings (the total charges less the inventory value at the end of the year) is 9% of the inventory value at the beginning of the year. If the dwelling is inventoried at \$1500, then Personal is charged 9% of \$1500, or \$135. In case two or more groups of animals occupy the same building the value of the part occupied by each must be estimated. Thus, one half of the cost of using the barn may be charged to Cattle, one fourth to Horses, and one fourth to Supplies. If a laborer and his family live in a building on the farm, the use of this building must be charged to Labor. The use of the silo must be charged to Supplies or to Silage if there is a separate Silage Account. These various amounts are then credited to the Buildings Account, and the balance to close is entered as loss or gain.

70. Account with land. — The account with Land is charged with the total inventory value of the farm, less the value of the buildings. Fences, drainage system, irrigation system, and all other improvements are included in Land. Taxes and interest on the value of land are also charged to this account, as are all costs of repairs, replacements, or construction of improvements not included under Buildings. For the purpose of the year's accounting no change should be made in the value of land on account of general changes in

land values. Only changes due to depreciation or increased value of improvements (fences, etc.) should be taken into account.

If a change is to be made in the value of land, it should be made between the closing of the books at the end of the year and the opening of the next set. A separate record of such changes may be made if thought desirable.

The amount necessary to balance the account after inventory has been credited is divided among the various fields in proportion to their inventory values. Suppose it is found that the cost of land for the year (the total charges less the inventory value at the end of the year) is 8.55% of the value of the land, and if corn is raised in a field valued at \$12,000, then corn is charged with 8.55% of \$12,000, or \$1026, for the use of land. The amounts thus charged to other accounts are credited to the Land Account. If the rate is carried to the nearest hundredth of one per cent, the balance of the Land Account will be very small, and the account is closed by entering the balance as loss or gain.

ACCOUNT WITH BUILDINGS

Enter this account in the Cost Account Book.

Feb. 1, 1919. Inventory: Dwelling, \$2750; laborer's dwelling, \$950; barn, \$4800; corncribs, \$225; machine sheds, \$250; hog house, \$300; poultry house, \$175; silo, \$350; milk house, \$250.

Taxes on buildings, \$115; insurance, \$70.50; repairs, \$416.20. Interest, 6% of inventory value at beginning of year.

Feb. 1, 1920. Inventory: Dwelling, \$2625; laborer's dwelling, \$875; barn, \$4450; corncribs, \$200; machine sheds, \$240; hog house, \$250; poultry house, \$150; silo, \$375; milk house, \$200.

Find total cost of buildings for the year and the rate per cent which this is of the total inventory at the beginning of the year. 20% of the barn was occupied by Horses, 35% by Dairy, 30% by Beef, and 15% by Supplies. Find the amount to be charged for the use of buildings to Horses, Dairy, Beef, Hogs, Poultry, Supplies, Equipment, Labor, and Personal. Charge use of silo to Supplies and milk house to Dairy. Credit Buildings with these items and close the account.

ACCOUNT WITH LAND

Using the following data, enter an account with Land in the Cost Account Book.

Feb. 1, 1919. Inventory: Field A (corn), 45 acres @ \$300; Field B (pasture), 32 acres @ \$200; Field C (oats), 60 acres @ \$275; Field D (corn), 80 acres @ \$275; Field E (hay), 40 acres @ \$300; Field F (pasture), 15 acres @ \$250; Field G (wheat), 40 acres @ \$275; Field H (corn), 60 acres @ \$300; Field I (potatoes), 2 acres @ \$300; Field J (hay), 16 acres @ \$200; buildings, $5\frac{1}{2}$ acres @ \$250; garden, $\frac{1}{2}$ acre @ \$250 (charge to Personal); waste (roads, etc.), 4 acres @ \$200 (charge to General Farm). Taxes on land, \$345.80. Total cost of maintenance of land (fences, etc.), \$281.35. Interest, 6% on total inventory.

Inventory, Jan. 31, 1920, was the same as above.

Using the method described in section 70, find the various items to be credited to this account and close it by entering the balance as loss or gain.

71. General farm account. — To this account is charged all farm expenses which can not be charged to any other account (see section 60). At the end of the year the total charge to this account may be charged directly to the Loss and Gain Account (see section 80), or it may be distributed among the various productive accounts (Beef Cattle, Dairy, Hogs, Poultry, and the various crop accounts, but omitting such accounts as Labor, Equipment, Work Horses, Land, Buildings, Interest, and Inventory).

The principle according to which this distribution is made is that each enterprise participates in General Farm in proportion to its magnitude. The total cost of carrying on an enterprise is the total measure of its magnitude. Thus, if the total expenses of all productive farm enterprises is \$4500 and if the total expense of raising wheat in a certain field is \$750, then $\frac{750}{4500}$, or $\frac{1}{6}$, of General Farm should be charged to Wheat.

Effort should be made to keep this account as small as possible by charging items to other accounts whenever that can be done.

72. Account with personal. — The chief purpose of the Personal Account is to find the value of what the farm contributes to the living of the farmer and his family. The account should be charged with everything of value which the farmer and his family obtain directly from the farm. Wood from the farm, garden truck, milk, eggs, and meat should be charged at farm values. Reasonable rental for the dwelling and the cost of labor entered in the Personal labor record (see section 61) should also be charged.

Where a small garden or orchard is kept mainly for the use of the family, all cost of keeping such garden or orchard may be charged to the Personal Account. If any products from garden or orchard are sold, the proceeds will then be credited to Personal. The same plan may be followed in the case of poultry or cows where a few hens are kept to supply the family with eggs or one or two cows to supply milk and butter. In case this plan is followed all labor on these enterprises must of course be entered in the Personal labor record.

Since the Personal Account is not closed into the Loss and Gain (see page 149), such sales will not contribute to the loss and gain as shown by the books. It is assumed the gain or loss in this connection is so small as to be negligible. Whenever the sales from such sources become at all important separate accounts must be kept. That is, there must then be separate accounts with Garden, Orchard, Poultry, etc., and items used from them by the family must be credited in these accounts.

The Personal Account should be credited with the value of the farmer's labor and the unpaid labor of his family including the cost of board.

The balance of the Personal Account shows the difference between the value of the labor done on the farm by the farmer and members of his family (if unpaid) and the amount which the farm contributes to the living of the farmer's family.

73. Interest account. — The Interest Account is charged with all interest actually paid out and credited with interest on each group of property. The interest credited for each group of property is exactly the amount charged to the account of that group. Thus, if interest to the amount of \$171 is charged to Horses (see page 97), this amount should be credited to the Interest Account. Interest is distributed among the various pieces of land according to their inventory values (see section 70). Thus, if land, exclusive of buildings but including other improvements, is valued at \$14,800, the interest at 6% will be \$888, and the interest on a field valued at \$4200 will be 6% of \$4200, or \$252. The interest on land should be credited to Interest at the same time that it is charged to Land. Similarly, the interest on buildings should be credited to Interest when it is charged to Buildings.

The balance in the Interest Account represents interest on the total farm property less interest on the farmer's debts. If there are no farm debts, there will be no charges to this account except the balance, which is finally credited to Loss and Gain (see the Interest Account on page 146).

74. Inventory account. — At the time of starting the year's farm accounts each item of property is charged to its proper account and at the same time credited to the Inventory Account. At the end of the year when the books are closed, each account is credited with the inventory value of the property covered by it, and the same amount is then charged to the Inventory Account. Thus, the Equipment Account is charged with the inventory value of equipment at the beginning of the year, and the same amount is credited to Inventory, while at the end of the year the inventory value of equipment is credited to Equipment and charged to Inventory. If the total inventory value of the farm property is greater at the end of the year than at the beginning, the Inventory Account shows a loss, and in the contrary case it shows a gain.

At the beginning of the year cash on hand and bills receivable are credited to Inventory and charged to their respective accounts, while at the end of the year these are charged to Inventory and credited to their accounts. Bills payable are charged to Inventory at the beginning of the year and credited to Bills Payable, while at the end of the year they are charged to their account and credited to Inventory.

At the beginning of the year the balance of the Inventory Account represents the farmer's total property invested in farming (together with other property which he may have entered into this account), while the balance of the items entered at the end of the year (entered in the opposite order) represents this property at the close. Hence the balance of the Inventory Account represents the farmer's loss or gain in property during the year. This loss or gain, however, may be very different from the real loss or gain on his operations as a farmer. The farmer may have used much of his gain for the living and pleasure of himself and his family (see section 33).

It may help to make clear the facts about the Inventory Accounts if we regard Inventory as an artificial person who comes into existence one day at the beginning of the year and one day at the end. At the beginning of the year Inventory turns over items of farm property to the various enterprises and departments of the farm with which accounts are to be kept. At this time Inventory is therefore credited, and the various other accounts are charged. At the end of the year all the property from the various enterprises may be regarded as being returned to Inventory when Inventory is charged and the other accounts credited.

Another way is to regard Inventory as standing in the place of the proprietor or farmer. At the outset he is credited with all the property that goes into the farming operation, and at the end of the year when the property then in the farming operation is returned to him, he is charged with its value.

75. Minor accounts. — A farmer may keep a number of minor accounts, such as Tractor, Auto, Wood Lot, Silo, etc. It is important to know the comparative cost of tractor and horses for farm work for which the tractor is adapted. For this reason, the farmer should keep an account with Tractor, which is charged with all costs of keeping the tractor and credited with all work done by it. The cost per hour tractor-use is found exactly as is the cost per horse-hour (see section 66).

Many farmers keep a record of the trips taken in the auto for various farm purposes and estimate the total distance driven for pleasure. They are then enabled to distribute the total cost of running the auto to Personal and to the other accounts for which it has been used.

If a farmer has a truck, a separate account should be kept to decide whether, for his particular farm, horses would be more or less expensive to use than the truck.

If a separate account is kept with the Wood Lot, this account should be charged with all cost of getting out wood or lumber and with the use of land and should be credited with the value of the finished product. The treatment of the account depends upon the magnitude of the operations. In case a relatively small amount of timber is removed, the account indicated above is entirely adequate. If, on the other hand, the work in the wood lot (timber tract) approaches in magnitude a lumbering enterprise, the account should be given a different name, such as Lumbering. In this case the inventory values of the timber tract before and after the operation should be entered in the account so as to allow for the decreased value of the tract.

There is no doubt that it will pay the farmer to keep such special accounts. On one farm it may pay, for instance, to have a tractor or a truck, and on another farm this may cause a considerable loss. The only way to decide for any particular farm is to keep accounts.

76. Special accounts. — When a farmer undertakes special work, such as erecting a new building or owning and operating a haybaler or a threshing machine, a special account should be kept for such undertaking. In case a new farm building is erected, the account with this operation should be charged with all items of cost, such as material, labor, and interest. When the building is completed, the total charges show its cost. At the end of the year the account is credited with this amount, and the Inventory Account is charged with it.

In an account with baling hay or operating a threshing machine, the inventory values of the machine should, of course, be entered in the inventories at the beginning and the end of the year. All costs of operation, such as interest, repairs, together with cost of labor, must be charged to the account, while it is credited with all earnings.

A complete labor record may be kept for each special account, dividing the work into separate operations which may be of sufficient interest or in which there may be different rates of pay.

In raising sugar beets, the laborers usually contract to do certain work, such as thinning and weeding, for a certain price per acre. No labor record should be kept for these operations, the account being charged with their total cost.

77. Cash account. — If a Cash Account is kept, the first entry in it is a charge of the cash on hand at the time the books are opened. At the same time this amount is credited in the Inventory Account. Every item of cash taken in must be charged to this account, no matter from what source it comes. The receipt from every sale, from labor done for others, or from a loan made at the bank must be thus entered. The items credited to Cash include every item of cash paid out or taken from the farming business. They include payment for wages, for goods bought, taxes, interest, and money taken by the farmer for his own use.

While there are some advantages in keeping a Cash Account when a set of cost accounts is kept, it is very doubtful whether it is worth the trouble. By far the greater part of farm transactions are for cash. If a Cash Account is kept, every such item must be entered twice instead of once. Any attempt to check the cash will cause so much trouble that the farmer is likely to give up all keeping of accounts.

In Part II it was necessary to keep a record of all cash paid out and received or rather of all receipts and expenditures, but when cost accounts are kept, the receipts and expenditures are recorded in other accounts, and the reasons for keeping special records of these which were given in Part II no longer exist. For the great majority of farmers the Cash Account is a luxury when cost accounts are kept. The theory underlying it is very simple, and whoever wishes to pay for this luxury by considerable labor can have it.

78. Household account. — If a complete set of Household Accounts is kept, it should contain all the items entered in the Personal Account (see section 72).

The contribution by the Household Account to the General Farm accounting, over and above that furnished by the Personal Account, consists almost entirely in furnishing definite information about the cost of board.

Besides this, a complete set of Household Accounts should contain much information of value in studying household economy. There should be a distribution of expenditures to show how much is spent for clothing for each member of the family, how much for food, light, telephone, books and papers, amusement and recreation, etc. To find the cost of board it would be necessary to evaluate the cost of preparing food, including service, charges on account of rental, etc. In any event it should be clear that the Household Account is not necessary for farm accounting. The Personal Account is sufficient.

79. Suspense accounts. — In some cases temporary accounts are kept until it is known more definitely what part of certain expenses are to be charged to the various permanent accounts. Such accounts are called "suspense accounts." Thus, the total cost of twine and threshing may be charged provisionally to Twine and Threshing accounts, and when the operation is finished the total so charged is divided among the crops involved. A suspense account is to be used only in case of necessity. If only one crop is involved, the cost of twine and threshing is charged directly to the account with this crop (see the account with Oats on page 148).

Some farm accountants keep a Manure Account, which is a suspense account, since the manure is finally charged to the various crops for which it is used. However, records such as those shown on page 159 serve the purpose fully, and these must be kept whether there is a Manure Account or not. Hence the net result of keeping this account is usually extra work with no corresponding gain.

80. Loss and gain account. -- As the various farm accounts are closed the balances are posted to a Loss and Gain Account (see page 147). Suppose the account with Wheat shows a gain; this is charged to Wheat to close the account and then credited to Loss and Gain. Thus, every gain is credited to Loss and Gain, and every loss is charged to this account. The balances of the Personal Account and the Inventory Account are not posted to the Loss and Gain Account. The nonproductive accounts, such as Horses, Labor, Equipment, Land, and Buildings, will show very little loss or gain, while productive accounts, such as Cattle, Hogs, Hay, Wheat, and Corn, may show a very considerable loss or gain. The Interest Account will show a gain in proportion to the capital which the farmer himself has invested in the business. The meaning of the gain or loss shown by the balance of the Loss and Gain Account will be considered in section 93.

81. Deciding what cost accounts are to be kept. — The question as to what different cost accounts should be kept on a particular farm can be answered only by knowing the character of the farm and the information which the farmer desires to obtain from his books. One farmer may be interested in knowing whether it is more profitable on his farm to raise corn, oats, or wheat, but he may have no interest in knowing the relative costs of raising one of them in different fields. It may be that the fields are so similar in quality of soil and in other respects that the cost in two such fields could never be materially different. In such a case, the farmer would keep a separate account with each crop but not with each field. On another farm the fields may be quite different in quality, in accessibility from the farmstead, and in convenience for working (shape and size, for instance). In such a case the farmer would keep a separate account with each field, such as Hay in Field C, Hay in Field E, Oats in Field B, etc.

In case a herd of cattle is kept mainly for dairy purposes, an account is kept with Dairy, to which is credited both dairy and beef products. If a herd is kept mainly for beef, an account is kept with Beef Cattle, in which these items are all entered. Trouble arises with a herd of so-called dual-purpose cattle.¹ It is very difficult to determine the cost of producing either milk or beef from such herds, and the best that can be done, unless one wishes to take considerable trouble, is simply to carry an account with Cattle.

On farms where some cattle are kept for beef and others for milk, there should be one account with Beef Cattle and one with Dairy. In some cases where exceptionally valuable animals are kept, the farmer may be justified in keeping a separate account with each animal. This is not infrequently the case with high-priced bulls or stallions.

¹ Dual-purpose cattle are cattle which produce considerable milk and at the same time are good beef animals.

In some instances, it may be worth while to keep a separate account with a single machine. Thus, on a small farm the farmer may want to know whether it pays to keep a corn binder or to cut the corn by hand. In most cases the yearly cost for any machine may be ascertained most conveniently by picking out the necessary items from other accounts and without a separate account with the machine itself.

82. Accounts with intermediate products. — Examples will make clear what is meant by intermediate products. A farmer raising hogs also raises corn to feed to the hogs. On a dairy farm, hay, corn in the form of silage, and roots are fed to the cows. These feeds are intermediate products. In what cases should separate accounts be kept with such intermediate products? Again examples will illustrate:

Suppose that on a certain farm corn is raised only for the purpose of feeding (the farm might be too far from transportation facilities to permit economical marketing). In this case should there be a separate account with Corn, or should the production of corn be regarded as part of the animal enterprises in which the corn is used as feed? On some farms a separate account with Corn in the case stated might be superfluous, but in most cases it would be of decided value. The question as to which is cheaper feed for horses, oats or corn, can be answered only from separate accounts with these feeds. The following principle may be followed:

A separate account should be kept with an intermediate product whenever the product is one for which there is a regular market or when its value in use may be compared with that of other articles with which it comes in competition.

Thus, beets raised for cattle feed should have a separate account, though their bulk makes sales generally impossible. The reason is that the beets come into direct competition with other feeds. The farmer wants to know what feeds he can produce most cheaply in proportion to their feed value.

83. Charge for intermediate products. — When intermediate products are charged to another account, shall they be charged at their cost of production or at their market value?

A farmer raising corn for his hogs may find that his cost of producing corn is 65¢ per bushel, while one year the farm value of the corn (see section 12) is 55¢, and the next year it is 80¢ per bushel. In figuring the cost of raising hogs, shall he figure the corn at 65¢ per bushel (cost of producing it), or shall he figure at 55¢ per bushel one year and 80¢ per bushel (the farm values) the next year?

This has given rise to much discussion and to divergent practice in the past, but the issue now seems to be settled; and, as naturally would be the case, it has been settled in accordance with sound accounting principles and common sense. The general principle is:

An intermediate product which may readily be marketed should be charged at its farm value and not at its cost of production. Other intermediate products should be charged at their cost of production.

Thus, in the case of corn fed to hogs, the corn should be charged at the farm value. That is, the charge should be at the rate of 55¢ per bushel one year and 80¢ the next year. Hay fed to cows should be charged at its farm value, and the value of the silage should be figured from the farm value of the mature corn and the feed value of the stalks.

For roots fed to cows, a different rule must be used. The roots may not readily be marketed (see section 82) and hence should be charged at their cost of production. This would also be the case with the corn if there were no market for it, and with corn silage if produced in a region not well adapted to the production of corn for grain.

84. Charge for by-products. — Closely related to the question discussed in the preceding section is the question of the charge to be made for a by-product, such as corn fodder.

Corn fodder can not be charged at its cost of production, since we do not know how to divide this cost between the corn and the fodder. It can not be charged at its farm value, since it is not an article of commerce and hence has no recognized farm value in the usual sense of that term. The proper charge is arrived at by finding the farm value of the hay or other feed of recognized farm value to which it is equivalent in feed value. In case a by-product has a definite commercial value this should of course be the value given to it for all purposes.

85. Charge for pasture. - - If a piece of land is used exclusively for pasture, the charge must be just sufficient to cover the total yearly cost of this land. In this case the charge for pasture is fixed exactly in the same manner as the charge for the use of land for other purposes (see section 70).

In localities where pasture is rented at standard rates, such rates will furnish a convenient basis for determining charge for pasture, and this in turn will determine the valuation of the pasture land.

The value of pasture in fields used mainly for other purposes, such as cornfields into which cattle are turned after the corn is husked, is determined by the amount of pasture they afford.

In actually fixing the pasture value of a certain field, all elements that really affect this value should be considered. Thus, for instance, the convenience to the farmstead of pasture used for animals that must be brought home daily is of considerable importance.

86. Taxes to be charged to an account. -- Taxes on real estate and on personal property (all property other than real estate) are usually levied separately. The farmer can tell at once from the official statement how much he is taxed on his cattle or his horses, and hence how much tax should be charged to these accounts. The tax on real estate is divided between land and buildings in proportion to their values.

87. Seasonal work record. — Methods of recording seasonal work (including fall seeding and manure) have already been considered in sections **17**, **18**, and **26** and are further illustrated below. Material other than manure used in seasonal work consists almost entirely of seed and should be entered directly into the Seasonal Work Record.

Following is part of the Seasonal Work Record on page 160.

WORK	FIELD	SEASON	YEAR	VALUE		USED 1920		INV. 1921	
Manure . .	A	Spring	1920	\$32	44	\$ 12	98	\$19	46
Grass seeding	K	Spring	1920	67	98	00	00	67	98
Manure . .	F	Fall	1920	29	24	00	00	29	24
Plowing . .	J	Fall	1920	18	16	00	00	18	16

In the accounts for 1920 the crop in Field A is charged with \$12.98 for manure (see page 160), and the remainder of the total value of the manure hauled to this field (\$19.46) is carried to the 1921 Inventory. The remaining three items are carried to the 1921 Inventory in their entirety, since no part of them was used for the 1920 crops. In closing the 1920 accounts the total of the column headed "Inv. 1921" is charged to Inventory (see page 147).

In opening the 1921 accounts a certain part of the manure inventory for Fields A and F (see section **18**) is charged to the accounts with crops in these fields, and the remainder entered in the "Inv. 1922" column (see section **26**). Part of the grass seed inventory for Field K is charged to Hay in Field K (see section **26**), and the remainder carried to the next inventory. The total of the cost of fall plowing in Field J is charged to the crop in that field.

The Seasonal Work Record for several successive years may thus be carried on one record, extending across two opposite pages. One line is added to the record for each item (see page 31, where a record extending for two years is given).

In some cases it may be desired to have the complete labor record of an enterprise collected in one place, even though part of the work is done one year and part the next. In such cases it will be necessary to copy the labor record of the work done in the fall into the labor record of the next year. If this is done, care must be taken not to include the labor hours thus carried over in finding the total of next year's labor hours.

88. Joint operations. — In some cases labor and other expenses on different products are so intimately connected that it is difficult to separate them. Various situations may arise. Many different products are raised in the garden and are usually handled under the one account with Garden. This serves in effect to divide the expense in proportion to the value of the products. Sometimes work is done in such a way on products carried under different accounts that it is extremely difficult if not impossible to decide with certainty how much work has been done on each. A farmer spends three hours selling butter for \$6.50, eggs for \$3.45, and garden truck for \$2.25. How shall this time be divided among Dairy, Poultry, and Garden? Dividing it in proportion to the value of the products sold would seem to be as good practice as can be devised.

If considerable miscellaneous marketing is done in this manner, a separate labor record with Marketing may be kept, and at the end of the year the total expense divided among the accounts involved. This plan is followed in the accounts and records on pages 143, 155, 158. In dividing the expenses in this case, account was taken of the fact that garden products were marketed during only a few months of the year and most of it in a few days (see page 143). The amounts apportioned in this case to Dairy and Poultry are roughly in proportion to the values of the products marketed. For further illustrations of joint operations see sections 96, 97.

89. Items on which interest is to be charged. — The principle according to which interest is to be charged to the various accounts will become apparent from a study of several representative accounts. The Land and Buildings accounts are charged with interest for one year on the inventory values, at the beginning of the year, of land and buildings (see page 141). In case a new building is put up during the year interest should be charged on it from the time it is ready for use until the end of the year.

The Animal and Equipment accounts are charged with interest on the average value during the year. Thus, in the Work Horse Account on page 146 the inventory value at the beginning of the year is \$830 and at the end of the year \$410. On March 10, horses were sold for \$405. Hence interest for one year is charged on \$450. No interest is charged on the cost of feed or labor on dairy cows, poultry, or work horses since they are supposed to be rendering a constant return in products or work. Interest is charged on the cost of feed and labor on hogs and beef cattle from the time this cost is incurred until the animals are sold. On a farm raising hogs there may be brood sows and boars worth a few hundred dollars at the time the inventories are taken, while during the year several thousand dollars' worth of hogs may be raised and sold. The average value of hogs for the year should be estimated and interest on this value charged to Hogs (see page 145).

Crop accounts are charged with interest on the cost of seed and labor from the time these costs are incurred until the crops are harvested and sold or turned over to the Supplies Account (see section 68). Interest is not charged on the amount charged these accounts for the use of land.

The Supplies Account is charged with interest on the average value of material charged to it (see page 145). This subject is discussed further in section 104.

90. Order of closing the accounts. — There is a certain interdependence among some of the accounts which causes a little difficulty in starting to close a set of cost accounts.

For instance, a certain number of hours equipment-use will be charged to Horses (see page 146), and at the same time it is likely that a certain number of hours horse-labor will be charged to Equipment (see page 144). It is clear that the total cost of horse-labor, and hence the cost per hour, can not be found unless the cost of equipment-use is known, and the total cost of equipment-use, and hence the cost per hour, can not be found unless the cost of horse-labor is known. It follows that one of these must be estimated for the purpose of finding the other (see section 65).

Interdependence of this kind may be found among the following accounts: Labor, Work Horses, Equipment, Buildings, Land, Auto, Truck, and possibly others. These accounts must all be closed before the others. Usually the Labor Account should be closed first. For this purpose it is necessary to estimate the cost per hour of horse-labor and equipment-use. The total cost of labor is then found and the cost per hour computed (see section 65).

Since there is usually little horse-labor charged to Equipment, this account should be closed next. For this purpose it is necessary to estimate the charge to be made for the use of buildings. Horse-labor should be charged at the rate used in closing the Labor Account, and man-labor at the exact rate found in closing the Labor Account (see page 148).

The accounts with Buildings, Work Horses, Land, and Auto may now be closed. If there is little horse-labor and equipment-use on buildings, the Buildings Account may be closed first among these.

In any particular case that order of closing the accounts should be chosen which makes the estimates as few and as small as possible.

91. A complete set of cost accounts. — The principles studied on the preceding pages will now be illustrated by a complete set of cost accounts. This set of accounts will also form a basis for the further study of cost accounting.

The data used were obtained from a small farm near Windom, Minnesota. On page 75 an accurate map of this farm is given, showing the division into fields and the use to which each field was put during the year. The record in diary form is intended to present the facts as they occurred from day to day in actual practice, while the records and accounts given on pages 141 to 163 constitute a complete set of cost accounts entered up from these data. The farm was worked by the owner and his sixteen-year-old son, who worked on the farm when not attending the high school in the near-by town.

Since the garden was the source of a very considerable income, a separate account is kept with Garden. A separate Labor Record is kept with Marketing (see page 158), and at the end of the year the total cost is divided among Cattle, Poultry, and Garden (see pages 142, 147, 143). A separate Feed Record and a complete Cash Account were kept, but only the summaries of these are given here. All feeds (except salt which is charged directly to Cattle) are charged to Supplies, but pasture is charged directly to the animals.

Special Sales Records for Dairy and Poultry and for products used in the house (see page 161) were kept as informal memoranda and only the totals entered in the accounts.

Drill corn is charged to Silage at the estimated value of the corn if allowed to grow into ear corn. This makes the cost of silage depend upon the market value of corn and not upon the character of the crop. The enterprise of producing silage corn absorbs all profits or losses of this operation, and the cattle are charged with the corn value of the silage.

By an accident the labor records for Oats, Hay, and Alfalfa were omitted, but the totals are shown in the accounts.

Inventory March 1, 1920

Land: 80 acres @ \$200.

Buildings: Dwelling, \$4000; barn, \$430; hog house, \$400; corn-crib, \$50; poultry house, \$100; machine shed, \$200; silo, \$420; granary, \$200; stock shed, \$100.

Horses: Nellie, \$50; Jennie, \$50; Dolly, \$140; Delly, \$140; Pete, \$140; Billy, \$125; Kaiser, \$125; Mutt (one year old), \$35; Jeff (spring colt), \$25.

Cattle: 9 cows @ \$80; 1 heifer, \$49; 9 head fat stock, 3375 lb. @ 6¢; 5 calves @ \$20; 9 head fat stock, 6300 lb. @ 7¢.

Hogs: 1 brood sow (pure bred), \$97.50; 10 brood sows @ \$35; boar (pure bred), \$50; 10 pigs, 1500 lb. @ 13¢.

Poultry: 80 hens @ \$1.25; 3 roosters @ \$2.00.

Equipment: Total value, \$1040.50.

Auto: (Overland) \$500.

Supplies: Total value, \$1050.49.

Bills Payable: Mortgage on farm (note), \$5675. Note in bank due March 15, \$900; note in bank due Nov. 1, \$800.

Cash on hand: \$1974.80.

DIARY RECORD OF EVENTS

March

Daily Chores: Cattle, 5 hr.; horses, 2 hr.; hogs, 1½ hr.; poultry, ½ hr.

1. Outside labor, 1; paid interest on mortgage, \$340.50.
2. Repairing manure spreader, 4; hauling hay (cattle), 5, 6.
3. Repairing engine, 2; working for Personal, 2.
5. Fixing road (General Farm), 2; working for Personal, 4, 8.
6. Marketing, 2, 4; special work on poultry, 4, 4.
8. Special work on hogs, 2; shelling corn (Hogs), 4, 1.
9. Hauling hay (Horses), 1, 2; working for Personal, 1; marketing, 2½, A (2½, A indicates 2½ hr. man-labor and use of auto for trip). Bought: shovel, 90¢; battery tester, \$1.50.
10. Sold: horse hide, \$4.25; 3 horses (Pete, Dolly, Delly), \$405 (received note at 8%).
Special work on hogs, 2; on cattle, 4.
11. Sold 12 head cattle, \$655 (received in payment note for 6 months at 8% interest). Paid: expense in taking cattle to market, \$1.
12. Special work on cattle, 3; on horses, 1; hauling straw (Horses), 4, 4; hauling 4 loads manure to Field A, 3, 6.
13. Marketing, 2½, A; special work on poultry, 2½.
14. Outside labor, 4. Paid: note at bank, \$900; interest, \$40.83.

16. Special work on hogs, 6, 6.
 17. Hauling hay (cattle), 3, 6; hauling 3 loads manure on Field A, 2, 4.
 18. Special work on horses, $1\frac{1}{2}$; exchange labor, 6, 12.
 19. Special work on horses, $2\frac{1}{2}$, 5; marketing, $2\frac{1}{2}$, 5.
 20. Special work on cattle, $5\frac{1}{2}$, $5\frac{1}{2}$. Bought: disk repairs, \$4.90; gasoline (Equipment), \$1.30; putty (Buildings), 10¢.
 22. Special work on hogs, 2; on poultry, $2\frac{1}{2}$, $2\frac{1}{2}$; marketing, $2\frac{1}{2}$, $2\frac{1}{2}$.
 23. Exchange labor, 6, 6. Sold cow and calf, \$115.
 24. Special work on hogs, 2; hauling straw for cattle, 4, 8.
 25. Special work on poultry, 4; hauling straw for cattle, 4, 8.
 26. Special work on hogs, 4; work for Personal, 2, 4; marketing, 2, 4; working on auto, 2.
 27. Marketing, 4, A. Bought: 8 T. timothy and clover, \$120; 34 bu. corn, \$40.80 (charge to Supplies); sow, \$105 (gave note for 12 months, bearing 10% interest).
 29. Special work on cattle, 2; on hogs, 2; hauling corn for hogs, 2, 4; hauling hay for horses, 1, 2.
 30. Special work on cattle, 3; piling straw for horses, 2; fixing roads (General Farm), 3.
 31. Special work on hogs, 2; Personal, $2\frac{1}{2}$, $2\frac{1}{2}$; marketing, $2\frac{1}{2}$, $2\frac{1}{2}$.
- Sold in March: Cream, \$27.56; 45 $\frac{1}{4}$ doz. eggs, \$22.34.*

Farm products used in house in March: 17 $\frac{3}{4}$ qt. cream, \$9.80; 16 qt. whole milk, \$1.29; 17 qt. skim milk, 23¢; 11 doz. eggs, \$4.01; 1 $\frac{1}{2}$ bu. potatoes, \$4.50; 8 lb. poultry, \$2.40.

April

Daily Chores: Cattle, 4 hr.; horses, 3 hr.; hogs, 2 hr.; poultry, $\frac{3}{4}$ hr.

1. Special work on hogs, 9.
2. Special work on horses, 1; sorting seed (Hill Corn), 1.
3. Special work on hogs, 1; on horses, 2; on cattle, 2. Sold wire fencing (credit Supplies), \$2.
5. Special work on poultry, $1\frac{1}{2}$; on hogs, 1; marketing, $1\frac{1}{2}$, A; piling lumber (Buildings), 1.
6. Wiring barn, 2; working for Personal, 3; getting plow, 1.
7. Grinding feed (Cattle), 1; hauling hay for horses, 1, 2; hauling 3 loads of manure to Field A, 2, 3.
8. Marketing, 2, A; wiring (Buildings), 1; working on auto, 1; hauling 3 loads manure to Field A, 2, 4.
9. Special work on hogs, 1; hauling hay for horses, 6, 6; hauling hay for cattle, 6, 6.

10. Working for Personal, 3. Sold 25 bu. oats, \$22.50. Bought: repairs for cream separator, \$2; repairs for harness, \$10.
 11. Working on auto, 4.
 12. Working for Personal, 12; working on auto, 4.
 13. Special work on horses, 10, 5.
 14. Special work on poultry, 2½; grinding feed for cows, 2; marketing, 2½, A. Bought on account from Farmer's Elevator: 103 lb. clover seed, \$62; 46 lb. timothy seed, \$5.98. (Charge new seed-ing in Field K. See page 160.)
 15. Bringing home potato plow, 3; planting potatoes, 1; working in garden, 2, 4.
 16. Working in garden, 2; disking for oats (Field K), 5, 19½.
 17. Special work on hogs, 1; on poultry, 1; hauling hay for cattle, 4, 4; marketing 1, A; repairing fence (Land), 2.
 19. Special work on hogs, 1; repairing harness (Equipment), 1.
 20. Working for Personal, 3½, 7; marketing, 3½, 7; hauling 2 loads manure to Field A, 2, 4. Bought battery tester, \$1.
 21. Outside labor, 6. Bought: heifer, \$50; 6 calves, \$134; 89 gal. gasoline (Equipment), \$24.92.
 22. Working for Personal, 1; repairing well, 2; repairing horse evener, 1.
 23. Grinding feed for hogs, 1½; repairing drag, ½; cleaning seed (Oats), 7; cleaning up around fields (General Farm), 4.
 24. Special work on poultry, 1; hauling hay for horses, 1, 2; mar-keting, 1½, A; cleaning seed (Oats), 1.
 26. Special work on hogs, 1; working for Personal, 2; building chicken coop, 2.
 27. Special work on hogs, 3, on horses, 1½; seeding oats, ½, 1; har-rowing oats, 1, 2; outside labor, 4½, 9.
 28. Hauling hay for cattle, ½, 1; seeding lawn (Personal), 1½; out-side labor, 5.
 29. Special work on hogs, ½; marketing, 2, A; working on auto, 1. Bought gas and oil (Auto), 70¢. Sold buggy, \$50.
 30. Special work on hogs, 2; working for Personal, 1½; working in garden, 5, 4. Paid for repairs on auto, \$6.35. Paid taxes as follows: land, \$23.80; buildings, \$8.90; horses, \$1.35; cattle, \$2.45; hogs, \$1.00; poultry, 15¢; equipment, \$1.50; auto, 70¢.
- Sold in April: 70.7 lb. butter fat, \$50.19; 38 doz. eggs, \$14.05.*

Farm products used on farm in April: 14 qt. cream, \$6.62; 29 qt. whole milk, \$2.15; 20 qt. skim milk, 30¢; 10 doz. eggs, \$3.56; 2½ bu. potatoes, \$12.37. Set aside 6 bu. seed potatoes @ \$3.00.

May

Daily Chores: Cattle, $6\frac{1}{2}$ hr.; horses, $1\frac{1}{2}$ hr.; hogs, 2; poultry, $\frac{1}{2}$.

1. Special work on poultry, 4; hauling hay for horses, $1\frac{1}{2}$, $1\frac{1}{2}$.
2. Repairing hogpen (Buildings), $1\frac{1}{2}$; repairing harness (Equipment), 1.
3. Marketing, $\frac{1}{2}$, A; working in garden, $3\frac{1}{2}$; disking for oats, 7, 28.
4. Building hogpen (Buildings), 2; disking oats, 5, 25.
5. Cutting seed potatoes (charge to Potatoes), 2; disking oats, 3, 15; seeding oats, $8\frac{1}{2}$, 17. Charge Oats, 60 bu. seed oats @ 90¢; credit Supplies.
6. Cutting seed potatoes, 4; harrowing oats, $4\frac{1}{2}$, 18; disking hill corn, 3, 12; disking oats, 1, 4.
7. Special work on cattle, 5; marketing, 2, A; planting potatoes, 2, 4; dragging potatoes, $\frac{1}{2}$, $1\frac{1}{2}$. Bought: corrosive sublimate for potatoes, 26¢; strawberry boxes, \$17.88; soy beans (Garden), \$6.80; garden seed, 35¢; poultry tonic, \$1.50.
8. Disking hill corn, $7\frac{1}{2}$, 30.
10. Working in garden, 7; disking hill corn, $7\frac{1}{2}$, 30.
11. Sold: 2 bu. seed corn, \$9; 10 hogs, 2130 lb., \$289.68.
12. Special work on cattle, $\frac{1}{2}$; on hogs, $1\frac{1}{2}$; marketing, 4, A.
13. Special work on hogs, 14, 16; disking hill corn, $4\frac{1}{2}$, 18.
14. Dragging hill corn, 3, 12.
15. Special work on poultry, 1; marketing, 1, A; planting hill corn, 4, 16. Bought on account from Farmer's Elevator: 100 lb. shorts, \$3.00; salt (Cattle), \$3.60; 4 grain sacks (Equipment), \$2.80.
16. Special work on hogs, 2; repairing fence, 1.
17. Plowing for drill corn (Field J), 2, 4; hauling 5 loads manure to Field J, 4, 16; planting hill corn, 7, 14.
18. Special work on poultry, $\frac{1}{2}$; repairing fence, 3; marketing, 1, A; hauling 12 loads manure to Field J, $10\frac{1}{2}$, 42; dragging hill corn, 1, 3; planting hill corn, 4, 8. Charge Hill Corn, 3 bu. seed corn @ \$4.00; credit Supplies.
19. Hauling hay for horses, 1, 2; working in garden, 6; hauling 17 loads manure to Field J, 17, 34.
20. Special work on horses, 1; working in garden, 4; hauling 18 loads manure to Field J, 18, 36.
21. Working for Personal, $1\frac{1}{2}$; hauling 12 loads manure to Field J, 10, 40; dragging for hill corn, 7, 21.

22. Special work on poultry, 1; on cattle, 1; repairing manure spreader, 1; working in garden, 1; hauling 14 loads manure to Field J, 14, 28; shelling seed for drill corn, 1, 1.
24. Outside labor, 9; working on berries, 1½; hauling 17 loads manure to Field J, 15, 40; plowing in Field J (Drill Corn), 5½, 22.
25. Working in garden, 4½; hauling 10 loads manure to Field J, 10, 20; dragging hill corn, 1½, 3; dragging drill corn, 4, 8.
26. Working in garden, 6½; plowing in Field J, 20, 65.
27. Special work on poultry, 1; taking up fences, 2½; working on corn planter, 2; marketing, 1, A; working in garden, 4; plowing in Field J, 14, 40; dragging hill corn, 6½, 19½; dragging drill corn, 2, 6.
28. Hauling corn to hogs, 3½, 7; repairing fence, ½, 1; plowing in Field J, 3, 12; hauling 1 load manure to Field J, ½, 1; dragging hill corn, 8, 32; dragging for drill corn, 5, 10.
29. Hauling hay to cattle, 5½, 10; working on auto, 1; working in garden, 2; hauling 12 loads manure to Field F, 10, 20; planting drill corn, 4, 8.
31. Paid: fire insurance on buildings, \$8.95; repairs on auto, \$2.50; labor \$1.00.

Sold in May: Cream, \$60.04; 38½ doz. eggs, \$14.49.

Farm products used in house in May: 11¼ qt. cream, \$4.86; 19 qt. whole milk, \$1.31; 13 qt. skim milk, 23¢; 10½ doz. eggs, \$3.64; 8 lb. butter, \$4.00; 170 lb. pork, \$37.40 (credit Supplies with the pork).

June

Daily Chores: Cattle, 5½ hr.; horses, 1 hr.; hogs, 1½ hr.; poultry, ½.

1. Special work on hogs, 2; dragging drill corn, 3½, 14. Sold 2½ bu. seed corn, \$11.25.
2. Marketing, 2, 4; working in garden, 4; hauling 4 loads manure to Field F, 3, 6.
3. Repairing fence, 1; working in garden, 3½; plowing in Field J, 3, 9; hauling 1 load manure to Field F, 1, 2; disking drill corn, 1½, 4½; dragging drill corn, 1½, 4½; planting drill corn, 1, 2. Charge Drill Corn with 4 bu. seed corn @ \$4.00; credit Supplies.
4. Building fence, 14; fixing corn plow, 1; grinding feed for hogs, 1; dragging drill corn, ½, 1.
5. Special work on poultry, 1; marketing, 2, A. Bought on account from Farmer's Elevator: 200 lb. Red Dog, \$7.50; 700 lb. shorts, \$22.75.

6. Special work on cattle, 8; buying a cultivator, 1; cultivating hill corn, 4, 8.
7. Cultivating hill corn, 20, 40. Bought strawberry boxes (Garden), 75¢.
8. Marketing, 2, A; painting porch, 1; working in garden, 2½; cultivating hill corn, 16, 32.
9. Fencing, 10, 10; buying posts (Land), 2; buying shorts (Supplies), 1; working in garden, 4.
10. Marketing, 1, A; painting screens, 6; picking berries, 3; working on odds and ends (General Farm), 6.
11. Special work on hogs, 8; fencing, 3; working in garden, 2½.
12. Marketing, 1, A; working in garden, 6½; cultivating hill corn, 13½, 27.
14. Repairing screen door, 1; working on mower, 1. Bought paint, \$1.10 (Buildings).
15. Marketing, 1, A; picking berries, 4.
16. Digging ditch (Land), 1; picking berries, 9; hauling 4 loads manure to Field F, 3, 6.
17. Repairing mower, 2; mowing alfalfa, 2, 4; cultivating drill corn, 8, 16.
18. Marketing, 1, A; picking berries, 10; cultivating drill corn, 16, 32. Paid Farmer's Elevator, cash on account, \$49.78.
19. Raking alfalfa, 1½, 23; bunching alfalfa, 6; picking berries, 9½; cultivating hill corn, 10½, 21.
21. Picking berries, 25; cultivating hill corn, 8, 16.
22. Marketing 1, A; picking berries, 25½; cultivating hill corn, 6, 12.
23. Picking berries, 17½; cultivating hill corn, 12, 24.
24. Special work on poultry, ½; marketing, ½, A; picking berries, 32.
25. Turning alfalfa, 3; picking berries, 25; cultivating hill corn, 6, 12.
26. Special work on hogs, ½; marketing, 1, A; hauling alfalfa, 10, 12; picking berries, 2; cultivating hill corn, 6, 12.
27. Picking berries, 7½.
28. Cultivating potatoes, 3, 6; picking berries, 15. Paid: for castrating calves, \$2.00; for bull service, \$12.50.
29. Special work on hogs, 2; marketing, 1, A; working on odds and ends (General Farm), 2; picking berries, 17½.
30. Working in garden, 4; picking berries, 14½; cultivating hill corn, 2, 4. Paid: berry pickers, \$14.40 (Labor); repairs on auto, \$33.68.

Sold in June: 15.6 lb. butter fat, \$7.94; sweet cream, \$55.13; 27 doz. eggs, \$8.64; 1590 qt. strawberries, \$494.40; 16 qt. strawberries, \$4.80; 324 qt. strawberries, \$114.65.

Farm products used in house in June: 10½ qt. cream, \$4.73; 19½ qt. whole milk, \$1.17; 3 qt. skim milk, 5¢; 9½ doz. eggs, \$3.01; 7 lb. butter, \$2.80.

July

Daily Chores: Cattle, 5½ hr.; horses, 1 hr.; hogs, 1½ hr.; poultry, ¾ hr.

1. Marketing, 1, A; picking berries, 17.
2. Spraying potatoes, 8, 8; picking berries, 4; working in garden, 6, 6.
3. Spraying potatoes, 2; picking berries, 2; working in garden, 6½; cultivating hill corn, 10, 20.
6. Special work on poultry, 1; marketing, 1, A; picking berries, 2; working on odds and ends, 1. Sold: 1½ bu. potatoes (Supplies), \$8.25; beans (Garden), 80¢. Bought on account from Farmer's Elevator: 1000 lb. shorts, \$35.50; 6400 lb. coal, \$37.50.
7. Marketing oats (Supplies), 4, 8. Sold 56 bu. 1919 oats (credit Supplies), \$50.30. Paid expense on auto, \$41.35.
8. Working for Personal, 4, 8; picking berries, 3.
9. Marketing, 1, 2; working for Personal, 3½, 7; grinding feed (Supplies), 1; picking berries, 4. Bought: 7 bu. corn (Supplies), \$10.65; Paris green (Potatoes), \$1.15.
10. Working for Personal, 2; picking berries, 6; cultivating hill corn, 6½, 13.
12. Sharpening sickles, 1; picking berries, 5; working in garden, 4; cultivating hill corn, 8, 16; mowing hay (Field D), 2, 4.
13. Marketing, 1, A; picking berries, 5½; cultivating hill corn, 10, 20; mowing hay, 3½, 7. Paid Farmer's Elevator on account, \$50.30.
14. Buying shorts (Supplies), 1; repairing hay loader, 1, 2; picking berries, 3; working in garden, 1; raking roadside (Hay), ½, 1; hauling roadside hay, 3, 3; hauling hay, 4, 4; spreading hay, 1.
15. Repairing hay loader, 3; picking berries, 2; cultivating hill corn, 8, 16; hauling hay, 9½, 14.
16. Special work on poultry, ½; marketing, 1, A; working in garden 1, 1; picking berries, 5½; cultivating hill corn, 6½, 13; hauling hay, 14, 12.
17. Repairing mower, 2; picking berries, 2; mowing hay, 5, 10.
18. Picking berries, 4.

19. Marketing, 1, A; repairing stacker, $1\frac{1}{2}$, 3; repairing rake, 1, 2; working in garden, 7; stacking hay, 21, 28; raking hay, $2\frac{1}{2}$, 5. Bought belt lacing, 20¢. Paid harness repairs, \$31.72. Bought on account from Farmer's Elevator: 600 lb. Red Dog, \$25.50; 1500 lb. shorts, \$52.50.
 20. Sharpening sickles, 1; mowing alfalfa, $2\frac{1}{2}$, 5; picking berries 3; stacking hay, 6, 8; raking hay, 1, 2.
 21. Working for Personal, $1\frac{1}{2}$; repairing stacker, 1; picking berries, $3\frac{1}{2}$; working on odds and ends, 3; outside labor, 5, 10.
 22. Grinding feed (Supplies), 2, 2; raking alfalfa, $1\frac{1}{2}$, 3; outside labor, 4, 8.
 23. Special work on poultry, $\frac{1}{2}$; marketing, 1, A; hauling alfalfa, 6, 12; picking berries, $2\frac{1}{2}$; raking roadside hay, $\frac{1}{2}$, 1; hauling roadside hay, 4, 4. Bought fly net for horses, \$1.40 (Horses). Credit Hay, $17\frac{1}{2}$ T. @ \$8; charge Supplies. Credit Alfalfa, $5\frac{3}{4}$ T. @ \$16; charge Supplies.
 24. Marketing, 1, A; buying feed, 1; working in garden, $3\frac{1}{2}$; working on odds and ends, 1. Paid Farmer's Elevator on account, \$9.82.
 27. Picking berries, 2. Bought 60 lb. twine, \$8.70 (charge Oats).
 28. Working in garden, 2; outside labor, 3.
 29. Repairing binder, 3; picking berries, 2; cutting oats, $1\frac{1}{2}$, 6; shocking oats, 2; outside labor, $2\frac{1}{2}$.
 30. Vaccinating cattle, 3; cutting oats, 4, 16; shocking oats, 2.
 31. Special work on poultry, 1; on cattle, 2; marketing, 1, A; working on odds and ends, 3. Received for outside labor, \$35.91. Paid: for telephone, \$10.90 (charge \$5.45 to Personal and \$5.45 to General Farm); for wiring barn, \$193; for labor, \$35; for shoeing horse, \$2; for veterinary service (Horses), \$13.
- Sold in July:* 263.9 lb. butter fat, \$146.94; 10 lb. butter, \$4.50; 44 doz. eggs, \$15.32.
- Farm products used in house in July:* $11\frac{1}{2}$ qt. cream, \$4.83; $30\frac{1}{2}$ qt. whole milk, \$1.65; 7 doz. eggs, \$2.34; 2 bu. potatoes, \$9.00; $13\frac{1}{2}$ lb. poultry, \$3.37; 11 lb. butter, \$4.40.

August

- Daily Chores:* Cattle, 5 hr.; horses, 1 hr.; hogs, $1\frac{1}{2}$ hr.; poultry, $\frac{1}{4}$ hr.
2. Special work on poultry, 1; marketing, 1, A; storing binder, 1; digging potatoes, 1; cutting oats, 7, 28; shocking oats, $13\frac{1}{2}$.

9. Stacking oats, 16, 24; outside labor, 10, 20.
10. Special work on cattle, 1; marketing, 1, A; stacking oats, 36, 36.
11. Buying feed (Supplies), 3; stacking oats, 8, 8; outside labor, 3. Received payment of note, \$655; interest, \$26.60.
12. Marketing, 2, A; grinding feed (Hogs), 1. Received interest for 6 months on \$405 note, \$16.20.
13. Special work on cattle, 1; outside labor, 9½, 19.
14. Marketing, 2, A; outside labor, 9, 18. Sold: tomatoes, \$2.95 (credit Garden); watermelons, \$3.60.
16. Outside labor, 10½, 12.
17. Special work on cattle, 2; marketing, 2, A; grinding feed (Horses), 1; outside labor, 2½.
18. Fencing, 4; working in garden, 4; buying feed (Supplies), 3.
19. Hauling 1 load manure to Field C, 1, 2; outside labor, 8, 8.
20. Hauling 8 loads manure to Field C, 7, 14; outside labor, 4½.
21. Marketing, 3, A; repairing roads (General Farm), 3, 6. Sold: tomatoes, \$1.65; watermelons, \$1.75; plums, 60¢. Paid auto repairs, 75¢.
23. Repairing barn, 4; working for Personal, 5, 10; working in garden, 3.
24. Working for Personal, 4, 8; working in orchard, 3.
25. Repairing barn, 8; outside labor, 3.
26. Marketing, 2, A; grinding feed (Hogs), 1; working in garden, 4. Sold tomatoes, \$2.45.
27. Repairing corn binder, 1½; cutting hill corn, 2½, 5; outside labor, 10, 20.
28. Marketing, 2, A; working in garden, 1; outside labor, 5, 10. Sold: cow, \$74.90; watermelons, \$2.40; apples, \$1.25. Bought: 8 gal. gasoline (Auto), \$2.42; 935 lb. shorts (Supplies), \$30.40.
30. Grinding feed (Horses), 1; working in garden, 8; cutting hill corn, ½, 1; outside labor, 7, 14.
31. Outside labor, 8, 6. Paid: for machinery repairs, \$10.05; for corn cultivator, \$55.
Sold in August: 117.9 lb. butter fat, \$63.85; butter, \$2.25; 26½ doz. eggs, \$10.88; spring fryers, \$24.05. Donated: (charge Personal) cream, 41¢; eggs, 52¢; milk, 29¢.
Farm products used in house in August: 7¾ qt. cream, \$3.16; 29 qt. milk, \$1.65; 4½ doz. eggs, \$1.80; 1¼ bu. potatoes, \$1.88 (credit Potatoes); 18 lb. poultry, \$5.40.

September

Daily Chores: Cattle, $5\frac{1}{2}$ hr.; horses, $1\frac{1}{2}$ hr.; hogs, $\frac{2}{3}$ hr.; poultry, $\frac{1}{4}$ hr.

1. Marketing, 2, A; working in garden, 3; outside labor, 12, 8.
2. Special work on hogs, 2, 3; painting wagon, $\frac{1}{2}$; piling lumber (Buildings), $\frac{1}{2}$; working in garden, 4; outside labor, 5, 10.
3. Special work on cattle, 1; repairing and oiling wagon, 4; cutting lawn, etc. (General Farm), 6.
4. Special work on poultry, $\frac{1}{2}$; marketing, $1\frac{1}{2}$, A; leveling around barn (General Farm), 4.
6. Special work on hogs, 1; marketing, 2, A.
7. Special work on cattle, $\frac{1}{2}$.
9. Marketing, $1\frac{1}{2}$, A. Paid hail insurance on oats, \$35. Bought on account from Farmer's Elevator: $8\frac{1}{2}$ bu. corn, \$12.50; 100 lb. hog feed, \$3.75; 100 lb. oil meal, \$4.00.
10. Special work on cattle, $\frac{1}{2}$, 1; on hogs, 1, 1; on horses, $\frac{1}{2}$.
13. Special work on hogs, 1, 2; on cattle, 1, 2; working in garden, 2; working in pasture (General Farm), 4.
14. Working in pasture (General Farm), 11.
15. Mowing alfalfa, 3, 6; working in garden, 3; outside labor, 4.
16. Repairing ditch (Land), 5; raking alfalfa, 2, 4.
17. Hauling alfalfa, 2, 4.
18. Repairing corn binder, $2\frac{1}{2}$; hauling alfalfa, 2, 4; working on odds and ends (General Farm), 4.
20. Sharpening knives for silage cutter, 2; working for Personal, $1\frac{1}{2}$; cutting silage, 13, 39; filling silo, 13; working in garden, 2; picking seed corn, 1.
21. Filling silo, 80, 100.
22. Filling silo, 30, 26; working in garden, 2; outside labor, 5.
23. Special work on hogs, 3; painting wagon, 1; working in garden, 2.
24. Special work on hogs, 2, 4; picking seed corn, 2; outside labor.
25. Marketing, 2, A; outside labor, 7.
27. Special work on hogs, 2, 4; digging potatoes, $5\frac{1}{2}$, 11; picking potatoes, $4\frac{1}{2}$.
28. Digging potatoes, $5\frac{1}{2}$, 11; picking potatoes, $18\frac{1}{2}$; working in garden, 1.
29. Digging potatoes, 15, 20.

30. Marketing, 3, A.

Sold in September: 75.6 lb. butter fat, \$40.07; 13 doz. eggs, \$5.92; 9 chickens, \$9.24; 19 hens, \$4.37; melons, \$23.60; apples, \$3.52; tomatoes, \$7.49; plums, \$1.70.

Received: from hail insurance, \$301.45 (credit Oats).

Paid: for auto repairs, \$6.50; for membership in Duroc Association (General Farm), \$10; for labor, \$8.

Farm products used in house in September: 9 qt. cream, \$7.55; 17½ qt. milk, 87¢; 4½ doz. eggs, \$1.87; 1¼ bu. potatoes, \$1.93 (credit Potatoes); 6½ lb. poultry, \$1.88; 15 lb. butter, \$6.75.

October

Daily Chores: Cattle, 5½ hr.; horses, 1½ hr.; hogs, ½ hr.; poultry, none.

1. Picking corn, 2.

2. Special work on cows, 6; storing corn binder, 1; storing silage cutter, 1; picking corn, 4.

3. Buying hogs, 3½. Paid for boar, \$45.

4. Fixing roads, 4.

5. Storing machinery, 2; burning weeds (General Farm), 6.

6. Collecting and burning weeds, 9.

7. Plowing in Field J, 3, 9; picking hill corn, 6, 6.

8. Plowing in Field J, 4, 16; outside labor, 6.

9. Picking corn, 2; working for Personal, 2; outside labor, 8.

11. Outside labor, 6½; threshing oats, 36, 24. Credit Oats, 572 bu. oats @ 50¢; charge Supplies.

12. Extra work on hogs, 2; outside labor, 5.

13. Outside labor, 10, 20. Paid \$20.08 for threshing oats.

14. Hauling straw (Cattle), 2, 4; outside labor, 6, 12.

15. Plowing in Field J, 5, 20; outside labor, 3.

16. Plowing in Field K, 4, 16; marketing, 4, A. Paid: for auto repairs, 90¢; insurance on buildings, \$15.45; for Farm Bureau membership, \$5; for veterinary services on hogs, \$5.05; veterinary services on cattle, \$5.05.

17. Repairing barn, 1; picking potatoes, 6.

18. Plowing in Field K, 6, 24.

19. Marketing, 2, A; moving feed for cattle, 2; poultry, 2. Bought: nails (Buildings), 45¢; salt for cows, 20¢.

21. Plowing in Field F, 7, 28.

22. Special work on poultry, 1½; working in the garden, 1½; plowing in Field F, 7½, 30. Credit Drill Corn, 65 T. silage @ \$4.20;

charge to Silage. (This value of silage is based on an estimated yield of 35 bu. ear corn per acre if it had been allowed to mature.)

23. Plowing in Field F, $3\frac{1}{2}$, 14; picking corn, 9, 9.
25. Picking corn, 7, 8; outside labor, 5.
26. Marketing, 2, A; outside labor, $6\frac{1}{2}$. Bought basket for feeding cows, \$2.35.
27. Repairing engine, 2; working for Personal, 3; in garden, 2.
28. Repairing corn picker, 1; picking corn, 27, 90.
29. Marketing, 4, A; fencing, 4. Paid: for harness repairs, 20¢; for bolts, 15¢.
30. Fencing, 4; outside labor, 4.
31. Working for Personal, 2; painting windows, 7. Paid pasture rent (Cattle), \$87. Paid taxes as follows: land, \$24.91; buildings, \$9.20; horses, \$1.45; cattle, \$2.60; hogs, \$1.10; poultry, 16¢; equipment, \$1.62; auto, 80¢.

Sold in October: 59.8 lb. butter fat, \$33.73; 11 doz. eggs, \$5.33; 9 bu. potatoes, \$9.00.

Received: premium on pigs, \$15; premium at fair (Personal), \$10; for outside labor, \$61.

Farm products used in house in October: $12\frac{3}{4}$ qt. cream, \$5.48; $15\frac{1}{2}$ qt. milk, 78¢; 23 qt. skim milk, 18¢; $5\frac{1}{2}$ doz. eggs, \$2.64; $2\frac{1}{2}$ bu. potatoes, \$2.00; 27 lb. poultry, \$6.75; 8 lb. butter, \$4.72.

November

Daily Chores: Cattle, $4\frac{1}{2}$ hr.; horses, $1\frac{1}{2}$ hr.; hogs, $\frac{1}{2}$ hr.; poultry, none.

1. Painting storm windows, 7. Paid: interest on note, \$56.00; interest on note for hogs (due Oct. 27th), \$5.25.
2. Special work on hogs, $1\frac{1}{2}$; on poultry, 1; marketing, 1, A. Bought $195\frac{1}{2}$ bu. corn, \$156.50.
3. Special work on hogs, 3; working for Personal, $6\frac{1}{2}$; plowing garden, 2, 4; Buildings, $\frac{1}{2}$; fencing, 1.
4. Working for Personal, 4; plowing in garden, 2, 4; outside labor, 2.
5. Filling in cow yard (Buildings), 1, 2; hauling 4 loads manure to Field C, 4, 8; plowing in garden, 2, 4.
6. Marketing, 2, A; fixing roads, 2; filling in around barn (Buildings), 3, 6. Bought: fixtures for buildings, \$3.35; husking mits (Equipment), 60¢; hog tonic, \$1.00. Paid for horseshoeing, \$3.00.
7. Working on odds and ends (General Farm), 4.

8. Sorting hogs, 1; working for Personal, 4; painting storm windows, 1½. Sold pigs, \$7.00.
 9. Marketing, 2, A; working for Personal, 1; painting storm windows, 1½; repairing barn door, 1.
 10. Attending meeting of Farmers Bureau (General Farm), 4; outside labor, 2.
 11. Painting storm windows, 4; preparing feed for cattle, 2.
 12. Hauling straw to cattle, 4, 8; picking corn, 4, 8. Credit Hill Corn, 980 bu. @ 65¢; charge to Supplies.
 13. Special work on hogs, 2; working for Personal, 3; outside labor, 1. Bought cornstalks and straw, \$12.
 14. Special work on hogs, 2.
 15. Marketing, 2, A; hauling 2 loads manure to Field C, 2, 4; picking corn, 5, 10. Bought 111.8 gal. gasoline, \$33.78 (charge one half to Equipment and one half to Auto).
 16. Special work on hogs, 2; attending school meeting (General Farm), 6.
 17. Marketing hogs, 4, 8; outside labor, 5, 10. Sold 4 hogs, 1480 lb., \$156.14.
 18. Special work on hogs, ½; picking corn, 8, 16.
 19. Hunting for calf, 2½; buying cow, 2. Paid for cow, \$91.
 20. Marketing, 2, A; painting storm windows, 3; opening tile outlet, 2; sacking potatoes, 1; working on odds and ends, 1; outside labor, 5. Bought 14,680 lb. corn (Supplies), \$110.10.
 22. Painting storm doors, 4; marketing potatoes, 4.
 23. Marketing potatoes, 4; outside labor, 4, 8. Sold 24 bu. potatoes, \$24. Paid for setting horseshoes, 53¢. Bought oil for auto, \$1.00.
 24. Outside labor, 8, 16. Received for outside labor, \$18.75.
 25. Working for Personal, 5, 10. Sold 100 feet lumber (Buildings), \$10.50.
 27. Hauling straw for horses, 1½, 3; outside labor, 2.
 29. Butchering hogs, 2; repairing cellar, 5; taking up fence, 1½.
 30. Marketing, 2, 4; working for Personal, 12. Sold harness tugs, \$2.50 (credit Supplies). Bought fixtures for cellar, \$4.20. Paid: fire insurance, \$9.30; corn huskers (Labor), \$12.
Sold in November: 30 lb. butter fat, \$17.10; 4 doz. eggs, \$2.15.
- Farm products used in house in November:* 14 qt. cream, \$5.56; 15 qt. milk, 75¢; 32 qt. skim milk, 12¢; 1½ doz. eggs, 84¢; 3 bu. potatoes, \$3.00; 20 lb. poultry, \$5.00; 2½ lb. butter, \$1.13; 238 lb. pork, \$40.46 (credit the pork to Hogs).

December

Daily Chores: Cattle, $4\frac{1}{4}$ hr.; horses, $1\frac{1}{4}$ hr.; hogs, $\frac{1}{2}$ hr.; poultry, $\frac{1}{2}$ hr.

1. Hauling straw to cattle, 4, 4; hauling 3 loads manure to Field K, 4, 4.
2. Hauling straw to horses, 2, 4; setting up corncrib, 3.
3. Repairing barn, 8.
4. Working for Personal, 0, 10; outside labor, 8, 8.
5. Outside labor, 5, 10.
7. Outside labor, $3\frac{1}{2}$.
8. Repairing well, 3.
9. Working for Personal, 4; outside labor, 3.
10. Marketing pigs, $1\frac{1}{2}$; buying bull, $4\frac{1}{4}$; repairing barn, 1. Received for outside labor, \$1. Sold 4 pigs to Walter James on account, \$14. Bought: 29 gal. gasoline (Equipment), \$8.74; new batteries (Equipment), \$2.00. Paid: for repairs, gasoline, and oil for auto, \$25.50; for one bull, \$132.
11. Dehorning cattle, 3; working on Personal, 4; cleaning barn (Cattle), 1. Bought: chicken waterer, \$5.50; scale, \$2.75; hog waterer, \$28.00; evener and clevises, \$7.75.
13. Special work on cattle, 1; working for Personal, 16.
14. Marketing, 3, A; working for Personal, 10, 8. Paid telephone rent, \$5 (charge half to Personal and half to General Farm). Bought: cow ease, \$1.50; calf weaner, 50¢.
15. Working for Personal, 16, 8. Paid for miscellaneous repairs on machinery, \$2.53.
16. Working for Personal, 16, 16. Sold $23\frac{1}{2}$ bu. potatoes, \$23.50.
17. Working for Personal, 4; cleaning barn (Cattle), 1, 2.
19. Marketing, 2, A; working for Personal, 2. Bought: 240 bu. corn (Supplies), \$150; fixtures for house, \$10.80.
22. Repairing corn sheller, 1; shelling corn (Supplies), 1.
23. Special work on cattle, 2; work on engine, 2.
24. Work on hill corn, 6; working for Personal, 0, $1\frac{1}{2}$; buying gas for engine, 1, 1. Bought: floater for waterer, \$1.70; garden plow, \$6.50; hog tank, \$1.10; wrench, \$1.25; brush, 35¢.
27. Shelling corn, 2.
28. Cleaning hog house (Hogs), 3; repairing hog house, 3.
29. Sorting hogs, 4; hauling straw to hogs, 1, 2; hauling straw to horses, $1\frac{1}{4}$, 4. Paid for sharpening plowshare and silo cutter, \$5.75. Bought slats for hay loader, \$1.50.

30. Marketing, 3, 3; working for Personal, 3, 3; hauling corn to hogs, 2, 4. Sold $5\frac{1}{2}$ bu. potatoes, \$5.50.

31. Hauling 3 loads manure to Field K, 3, 6; outside labor, 1.

Sold in December: 106.4 lb. butter fat, \$59.26.

Farm products used in house in December: 15 $\frac{1}{2}$ qt. cream, \$5.12; 25 qt. milk, \$1.20; 37 qt. skim milk, 57¢; 4 $\frac{1}{2}$ doz. eggs, \$3.24; 4 bu. potatoes, \$2.40; 9 $\frac{1}{2}$ lb. poultry, \$4.37; 12 lb. butter, \$4.92.

January

Daily Chores: Cattle, 8 $\frac{1}{4}$ hr.; horses, 1 hr.; hogs, 1 $\frac{1}{2}$ hr.; poultry, $\frac{1}{2}$ hr.

1. Working on lighting plant, 1; working on corn sheller, 2; shelling corn, (Supplies) 2.
3. Hauling straw to cattle, 5, 10; hauling cornstalks to cattle, 1, 2; outside labor, 1.
4. Working for Personal, 25 $\frac{1}{2}$.
5. Marketing, 1, 2; working for Personal, 1, 2; grinding feed for cattle, 2, 4. Bought: gas and oil for engine (Equipment), \$3.62; battery for engine, 50¢.
6. Grinding feed for cattle, $\frac{1}{2}$, 1; hauling cornstalks for cattle, 1 $\frac{1}{2}$, 3; repairing well, 8 $\frac{1}{2}$. Paid \$2 for work on well (Labor).
7. Bedding hogs, 2, 4; repairing machinery, $\frac{1}{2}$; hauling 4 loads manure to Field F, 3, 6.
8. Special work on horses, 2; on poultry, 2, 4; on hogs, 2, 4; on cattle, $\frac{3}{4}$; working for Personal, 3, 6; shelling corn (Supplies), 2.
11. Hauling cornstalks to cattle, 2, 4; repairing harness, 1; shelling corn (Supplies), 1 $\frac{1}{2}$.
12. Working for Personal, 3; hauling 2 loads manure to Field F, 2, 4.
13. Outside labor, 7, 14.
14. Outside labor, 7, 14.
15. Outside labor, 6, 12.
17. Outside labor, 5, 10.
18. Shelling corn (Supplies), 18, 36.
19. Cleaning hog house, 2; repairing storm window, 1.
20. Cleaning hog house, 1; putting hogs in pen, $\frac{1}{2}$; working for Personal, 1 $\frac{1}{2}$, 1; grinding oats (Cattle), 3 $\frac{1}{2}$; hauling straw for cattle, 5 $\frac{1}{2}$, 11; repairing gate, 1.
21. Marketing, 3, 3; working for Personal, 5, 10; hauling 4 loads manure to Field F, 3, 6.
22. Working for Personal, 3; cleaning tile (Land), 6.
23. Repairing pump, 2; working on farm drainage, 5.

25. Marketing, 3, 3; working for Personal, 3, 6; outside labor, 3, 6. Received for outside labor (work on school ground), \$14.66.
26. Taking up tile (Land), 7, 9.
27. Working for Personal, 7; repairing belting and harness, 1; cleaning shop (Buildings), 2.
28. Marketing, 3, 3; repairing machine shed, 2½; hauling 3 loads manure to Field F, 2½, 4½; special work on cattle, 6.
29. Special work on cattle, 7; cleaning ice house (General Farm), 3½.
31. Marketing, 2, A; repairing wagon, ½.

Sold in January: 124.5 lb. butter fat, \$60.07; 41½ doz. eggs, \$19.24.

Farm products used in house in January: 19½ qt. cream, \$5.97; 14½ qt. milk, 64¢; skim milk, 20¢; 8½ doz. eggs, \$3.63; 4½ bu. potatoes, \$4.50; 10½ lb. poultry, \$2.94; 4 lb. butter, \$1.52.

February

Daily Chores: Cattle, 2½ hr.; horses, 1 hr.; hogs, ¾ hr.; poultry, ¾ hr.

1. Working for Personal, 29, 48.
2. Cleaning pigpen, 1; marketing, 1½, A; working for Personal, 3, 6; hauling straw to cattle, 4, 8.
3. Grinding feed for horses, 1; working for Personal, 2.
4. Repairing fence, 1; marketing, 2, A.
7. Marketing, 3, A. Paid: repairs and gas for auto, \$24.90; gas, oil, and kerosene for engine, \$17.58; gas for lighting plant, \$5.00 (Personal).
8. Special work on hogs, 1½; setting up sleigh, ½.
9. Hauling hogs to market, 34, 68. Sold 47 hogs, 14,280 lb., \$1074.71. Paid expenses on shipping hogs, \$1.15.
10. Special work on hogs, 1.
11. Butchering hogs (Hogs), 5; marketing, 3, A. Paid cyclone insurance (General Farm), \$15.90.
12. Special work on cattle, 2.
14. Attending sale (General Farm), 2. Paid pasture for cattle, \$5.
15. Special work on poultry, 2, 4; marketing, 2, 4.
19. Marketing, 4, 4. Bought: lumber for hog house, \$1.40; ax handle, 65¢.
20. Grinding feed for cows, 2.
21. Attending sale, 3, 6; exchange labor, 3, 6.
22. Exchange labor, 5, 10.

23. Special work on poultry, $1\frac{1}{2}$; marketing, $1\frac{1}{4}$, A.
24. Cleaning hog house, 2; grinding feed for cows, 2.
25. Marketing, 3, A.
26. Marketing, 4, A. Paid: note, \$800; interest on note, \$13.50.
28. Hauling hay to cattle, 5, 5; hauling straw to cattle, 8, 8. Paid: for labor, \$81.90; for shelling corn (Supplies), \$6.70.

Sold in February: 133.4 lb. butter fat, \$61.84; 50 lb. butter, \$17.50; 32 $\frac{1}{2}$ doz. eggs, \$9.30.

Farm products used in house in February: 15 $\frac{1}{2}$ qt. cream, \$4.58; 17 $\frac{1}{4}$ qt. milk, 62¢; skim milk, 14¢; 7 $\frac{1}{2}$ doz. eggs, \$1.77; 2 bu. potatoes, \$2.00; 10 lb. butter, \$3.50; 231 lb. pork, \$36.96 (credit Hogs). Credit Potatoes, 50 bu. @ \$1.00; charge to Supplies.

Inventory: March 1, 1921

Land: 80 acres @ \$200.

Buildings: Dwelling, \$3880; barn, \$607; hog house, \$380; corn-crib, \$48; poultry house, \$95; machine shed, \$190; silo, \$410; granary, \$190; stock shed, \$90.

Horses: Nellie, \$40; Jennie, \$40; Billy, \$125; Kaiser, \$125; Mutt (two years old), \$45; Jeff (one year old), \$35.

Cattle: 11 cows @ \$80; 1 bull, \$130; 17 two-year olds, \$552.50; 3 yearlings, \$67.50; 5 calves, \$30.

Hogs: 2 brood sows @ \$30; 2 brood sows @ \$45; 7 brood sows @ \$22; 1 boar, \$25; 1 boar, \$30; 35 pigs, 4000 lb. @ 7¢; 6 fat hogs, 1200 lb. @ 7¢.

Poultry: 75 hens, \$93.75.

Equipment: Total value, \$1075.

Auto: (Overland) \$400.

Supplies: Total value, \$544.98.

Bills Payable: Mortgage on farm and note, \$5675. Note, \$105.

Bills Receivable: Note for \$405, due 3/10, 1921.

Cash on hand: \$1431.93.

Seasonal Work: \$420.27.

Accounts Receivable: \$14.

Accounts Payable: \$168.98.

At the end of the year the summaries of the feed records showed:

Horses: 8 T. tame hay, \$100.00; 4 $\frac{1}{4}$ T. wild hay, \$65.60; 97 bu. ear corn, \$109.22; 325 bu. oats, \$202.70.

Cattle: 8 $\frac{1}{4}$ T. tame hay, \$127.25; 9 T. wild hay, \$136.25; 66 T. silage, \$364.13; 1 T. bundle corn, \$20.00; 146 bu. oats, \$88.40; 200 lb. bran, \$6.00.

Hogs: 666 bu. ear corn, \$750.00; 12 bu. shelled corn, \$21.75; 110

bu. oats, \$57.75; 4235 lb. shorts, \$142.25; 175 lb. oil meal, \$9.63; 20,650 lb. skim milk, \$108.60; 800 lb. Red Dog, \$30.00; 100 lb. hog feed, \$3.75; 200 lb. tannage, \$11.50.

Poultry: Ear corn, \$15.60; shelled corn, \$8.90; oats, \$30.81.

It was estimated that the cattle used 65% of the barn and stock shed, and the horses used 35%. In estimating the use of buildings it is assumed that it amounts to 10% of the inventory value. It is found later that the cost was about 11.79%.

Land was credited with \$120 for pasture to cattle, \$110 pasture to horses, and \$15 pasture to hogs. Buildings were charged with the use of 2.5 acres and Garden with 2.85 acres.

ACCOUNTS AND RECORDS

On pages 141-150 are given the complete accounts resulting from the material given above in diary form. Pages 151-160 contain the complete Labor Records for this set. Special Sales Records are given on page 161, and on pages 162-163 an Annual Labor Record is given, while the information contained in this record is exhibited graphically on page 164. In general such accounts and records should be arranged in alphabetical order, but for the purpose of saving space in printing, this rule has been departed from in some instances.

In this set as originally kept on the farm from which it came, a complete Cash Account was kept, but the details of this account have been omitted here, only the totals paid out and received being given. The balance of this account over and above the amount on hand has been charged to Personal.

All records were entered on the regular blank shown on page 203, such additional rulings made as are shown in the records as they now stand. These additional rulings are exactly those indicated on pages 203-205. In actual practice it may be well to write into the accounts more complete information than is possible when both sides of an account are compressed on one narrow page as is the case in the set shown here. However, one line will in nearly all cases be sufficient to indicate all the information that is of any real use in the accounts.

COST ACCOUNTING

141

ACCOUNT: BUILDINGS

3/1	Inventory	\$5900 00	11/25	Sold 100 ft. lumber	\$10 50
	Putty	10	2/28	Inventory	5890 00
4/30	Tax	8 90		Horses (estimated)	21 00
5/31	Fire insurance	8 95		Equipment (estimated)	20 00
6/14	Paint	1 10		Personal 11.7% of \$4000	468 00
7/31	Wiring barn	193 00		Cattle 11.7% of 350	40 95
10/16	Insurance	15 45		Hogs 11.7% of 400	46 80
10/19	Nails	45		Poultry 11.7% of 100	11 70
10/31	Tax	9 20		Silage 11.7% of 400	46 80
11/6	Fixtures	3 35		Supplies 11.7% of 250	29 25
11/30	Fixtures	4 20			
11/30	Insurance	9 30			
12/19	Fixtures	10 80			
2/19	Lumber, hog house	1 40			
	107½ hr. man-labor	29 31			
	8 hr. horse-labor	1 91			
	8 hr. equipment-use	74			
	Int. 6% on \$5900	354 00			
	Use of 2½ acres land	31 88			
	Gain	96			
		<u>\$6585 00</u>			<u>\$6585 00</u>

ACCOUNT: LAND

3/1	Inventory	\$16000 00	2/28	Inventory	\$16000 00
4/30	Tax	23 80		Pasture to Horses	110 00
10/31	Tax	24 91		Pasture to Cattle	120 00
	80½ hr. man-labor	21 90		Pasture to Hogs	15 00
	20 hr. horse-labor	4 77		Buildings 2.5 A. @ \$12.75	31 88
	20 hr. equipment-use	1 85		Garden 2.85 A. @ 12.75	36 34
	Int. 6% on \$16,000	960 00		Oats 14 85 A. @ 12.75	189 34
	Manure used in pasture	18 89		Drill corn 12 A. @ 12.75	153 00
	Gain	44		Hill corn 19 35 A. @ 12.75	246 71
		<u>\$17056 56</u>		Potatoes 1 15 A. @ 12.75	14 68
				Hay 8 75 A. @ 12.75	111 56
				Alfalfa 2.20 A. @ 12.75	28 05
					<u>\$17056 56</u>

ACCOUNT: POTATOES

4/30	6 bu. seed (Supplies)	\$18 00	Aug.	1½ bu. to Personal	\$ 1 88
5/7	Corrosive sublimate	26	Sept.	1½ bu. to Personal	1 93
7/9	Paris green	1 15	Oct.	9 bu. (sold cash)	9 00
	87½ hr. man-labor	23 80	Oct.	2½ bu. (Personal)	2 00
	61½ hr. horse-labor	14 67	11/23	24 bu. to cash	24 00
	Use of land	14 68	Nov.	3 bu.	3 00
	61½ hr. equipment-use	5 69	12/16	23½ bu. (cash)	23 50
	Gain	51 46	12/30	5½ bu. (cash)	5 50
		<u>\$129 71</u>	Dec. 4	4 bu. (Personal)	2 40
			Jan.	4½ bu. (Personal)	4 50
			Feb.	2 bu. (Personal)	2 00
			Feb.	50 bu. (Supplies)	50 00
					<u>\$129 71</u>

FARM ACCOUNTING

ACCOUNT: CATTLE

3/1	Inventory	\$1512	50	3/11	Sold 12 head cattle (note)	\$655	00
3/11	Expense marketing	1	00	3/23	Sold cow and calf	115	00
4/31	Bought heifer	50	00	8/28	Sold cow	74	90
4/31	Bought 6 calves (cash)	134	00	2/28	Inventory	1060	00
4/30	Tax	2	45		Cash sales dairy products	707	96
5/	Salt (on acct.)	3	60		Dairy products to Personal	118	80
6/28	Castrating calves	2	00		Skim milk to Hogs	108	60
6/28	Bull service	12	50		110 loads manure	165	00
10/16	Veterinary	5	05		Loss	140	45
10/19	Salt		20				
10/31	Pasture rent (cash)	87	00				
10/31	Tax	2	60				
11/19	Bought cow	91	00				
12/10	Paid for bull	132	00				
12/14	Cow case	1	50				
2/14	Pasture (cash)	5	00				
	Pasture (Land)	120	00				
	207½ hr. man-labor	564	81				
	131½ hr. horse-labor	31	36				
	Int. 6% on \$1600	96	00				
	Feed (Supplies)	742	03				
	Marketing, man-labor	30	56				
	Marketing, horse-labor	9	51				
	131½ hr. equipment-use	12	18				
	Marketing, equipment-use	3	68				
	Use of buildings	40	95				
	Auto marketing	52	23				
		\$3745	71			\$3745	71

ACCOUNT: HILL CORN, FIELD I (19.35 ACRES)

5/18	3 bu. seed corn	\$12	00	11/12	980 bu. to Supplies @ 65¢	\$637	00
	304½ hr. man-labor	82	78				
	677½ hr. horse-labor	161	58				
	Use of land	246	71				
	677½ hr. equipment-use	62	74				
	Int. 6% on \$200 6 mo.	6	00				
	Gain	65	19				
		\$637	00			\$637	00

ACCOUNT: DRILL CORN, FIELD J (12 ACRES)

6/3	4 bu. seed corn	\$16	00	10/22	6½ T. silage @ \$.20 (Silage)	\$273	00
	95½ hr. man-labor	25	98		Loss	118	14
	259 hr. horse-labor	61	77				
	Use of land	153	00				
	259 hr. equipment-use	23	98				
	Int. 6% \$100 4 mo.	2	00				
	Manure	108	41				
		\$301	14			\$301	14

COST ACCOUNTING

143

ACCOUNT: GARDEN

5/7	Strawberry boxes	\$17 88	6/30	1590 qt. strawberries	\$494 40
5/7	Soy beans	6 80	6/30	16 qt. strawberries	4 80
5/7	Garden seed	35	6/30	324 qt. strawberries	114 65
6/7	Strawberry boxes	75	7/6	Beans	80
	453½ hr. man-labor	123 28	8/14	Tomatoes	2 95
	Marketing, man-labor	4 37	8/14	Watermelons	3 60
	27 hr. horse-labor	6 44	8/21	Tomatoes	1 65
	Marketing, horse-labor	1 36	8/21	Watermelons	1 75
	Use of land	36 34	8/21	Plums	60
	27 hr. equipment-use	2 50	8/26	Tomatoes	2 45
	Marketing, equipment-use	54	8/28	Watermelons	2 40
	Auto marketing	7 46	8/28	Apples	1 25
	Gain	459 54	Sept.	Melons	23 60
			Sept.	Apples	3 52
			Sept.	Tomatoes	7 49
			Sept.	Plums	1 70
		\$667 61			\$667 61

ACCOUNT: GENERAL FARM

7/31	Telephone (¼ total charge)	\$5 45	Loss	\$144 98
Sept.	Membership Duroc Ass'n	10 00		
10/16	Farm Bureau membership	5 00		
12/14	Telephone	2 50		
2/11	Cyclone insurance	15 90		
	101½ hr. man-labor	27 54		
	12 hr. horse-labor	2 86		
	12 hr. equipment-use	1 11		
	Auto	74 62		
		\$144 98		\$144 98

ACCOUNT: AUTO

3/1	Inventory	\$500 00	2/28	Inventory	\$400 00
4/29	Gas and oil	70		Personal (¼ net cost)	149 24
4/30	Repairs	6 35		Gen. Farm (¼ net cost)	74 62
4/30	Tax	70		Cattle marketing (¾ net cost)	52 23
5/31	Repairs	2 50		Poultry marketing (¾ net cost)	14 93
6/30	Repairs	33 68		Garden marketing (¾ net cost)	7 46
7/7	Expense	41 35			
6/21	Repairs	75			
8/28	Gasoline	2 42			
Sept.	Repairs	6 50			
10/16	Repairs	90			
10/30	Tax	80			
11/18	Gasoline	16 89			
11/24	Oil	1 00			
12/10	Gas, oil, repairs	25 50			
2/7	Gas and repairs	24 90			
	13 hrs. man-labor	3 54			
	Int. 6% on \$500	30 00			
		\$698 48			\$698 48

ACCOUNT: EQUIPMENT

3/1	Inventory	\$10.40	50	4/29	Sold buggy	\$50.00
3/9	Shovel (cash)		90	2/28	Inventory	1075.00
3/9	Battery tester	1	50	42½	hr. @ 6¢ (Est.) Horses	2 55
3/20	Disk repairs (cash)	4	90	138	hr. @ 9.26¢ Hogs	12 78
3/20	Gasoline (cash)	1	30	46	hr. @ 9.26¢ Supplies	4 26
4/10	Repairs separator	2	00	165	hr. @ 9.26¢ Silage	15 28
4/10	Repairs harness	10	00	677½	hr. @ 9.26¢ Hill Corn	62 74
4/20	Battery tester	1	00	259	hr. @ 9.26¢ Drill Corn	23 98
4/21	89 gal. gas	24	92	271½	hr. @ 9.26¢ Oats	25 14
4/30	Tax	1	50	57	hr. @ 9.26¢ Alfalfa	5 28
5/15	4 grain sacks	2	80	103	hr. @ 9.26¢ Hay	9 54
7/19	Belt lacing		20	20	hr. @ 9.26¢ Land	1 85
7/19	Harness repairs	31	72	8	hr. @ 9.26¢ Buildings	74
8/31	Repairs	10	05	27	hr. @ 9.26¢ Garden	2 50
8/31	Corn cultivator	55	00	12	hr. @ 9.26¢ General Farm	1 11
10/9	Harness repairs		20	57	hr. @ 9.26¢ Marketing	5 28
10/9	Bolts		15	190	hr. @ 9.26¢ Personal	17 59
10/26	Feeding basket	2	35	370½	hr. @ 9.26¢ Manure	34 31
10/31	Tax	1	62	157	hr. @ 9.26¢ Fall Plow	14 54
11/6	Husking mits		60	14½	hr. @ 9.26¢ Poultry	1 34
11/15	Gasoline	16	89	131½	hr. @ 9.26¢ Cattle	12 18
12/10	Gasoline	8	74	61½	hr. @ 9.26¢ Potatoes	5 69
12/10	New batteries		2 00	312	hr. @ 9.26¢ Outside Labor	28 89
12/11	Chicken waterer		5 50			
12/11	Scale		2 75			
12/11	Hog waterer		28 00			
12/11	Evener and clevises		7 75			
12/14	Calf weaner		50			
12/15	Disk repairs		2 53			
12/24	Floater for waterer		1 70			
12/24	Garden plow		6 50			
12/24	Hog tank		1 10			
12/24	Wrench		1 25			
12/24	Brush		35			
12/29	Sharpening cutter		5 75			
12/29	Slats for hay loader		1 50			
1/5	Gas and oil		3 62			
1/5	Battery		50			
2/7	Gas, oil, kerosene		17 58			
2/19	Ax handle		65			
	8 hr. horse-labor		1 91			
	65½ hr. man-labor		17 75			
	Use of buildings (estimated)		20 00			
	Int. 6% on \$1050		63 00			
	Gain		1 54			
		\$1412	57			\$1412 57

COST ACCOUNTING

145

ACCOUNT: HOGS

3/1	Inventory	\$692 50	5/11	Sold 10 hogs (2130 lb.)	\$289 68
3/27	Bought sow (note)	105 00	Oct.	Premium	15 00
2/30	Tax	1 00	11/8	Sold 2 pigs	7 00
10/3	Bought boar	45 00	11/17	Sold 4 hogs (1480 lb.)	156 14
10/16	Veterinary	5 05	11/30	238 lb. pork to Personal	40 46
10/31	Tax	1 10	12/10	Sold 4 pigs (on acct.)	14 00
11/6	Hog tonic	1 00	2/9	Sold 14,280 lb. hogs	1074 71
2/9	Expense shipping hogs	1 15	Feb.	231 lb. to Personal	36 96
	Pasture	15 00	2/28	Inventory	723 00
	Feed (Supplies)	1135 23		4 loads manure	6 00
	Skim milk (Cattle)	108 60		Loss	72 35
	633 hr. man-labor @ 27.2¢	172 18			
	138 hr. horse-labor	32 91			
	138 hr. equipment-use	12 78			
	Int. 6% on \$1000	60 00			
	Use of buildings	46 80			
		<u>\$2435 30</u>			<u>\$2435 30</u>

ACCOUNT: SUPPLIES

3/1	Inventory	\$1050 49	3/10	Sold horse hide (cash)	\$4 25
3/27	Bought 8 T. hay	120 00	4/3	Sold wire fencing	2 00
3/27	Bought 34 bu. corn	40 80	4/10	25 bu. oats	22 50
5/15	Bought 100 lb. shorts (acct.)	3 00	4/30	6 bu. seed to Potatoes @ \$3	18 00
6/5	Bought 200 lb. Red Dog (acct.)	7 50	5/5	60 bu. oats (Oats)	54 00
11/2	Bought 700 lb. shorts	22 75	5/11	2 bu. seed corn (cash)	9 00
7/6	Bought 1000 lb. shorts (acct.)	35 50	5/18	3 bu. seed corn (Hill Corn)	12 00
7/9	Bought 7 bu. corn (Cash)	10 65	6/1	2½ bu. seed corn	11 25
7/19	600 lb. Red Dog (acct.)	25 50	6/3	4 bu. seed corn (Drill Corn)	16 00
7/19	500 lb. shorts (acct.)	52 50	7/6	1½ bu. potatoes	8 25
7/23	17½ T. hay (Hay)	140 00	7/7	56 bu. oats (cash)	50 30
7/23	5½ T. alfalfa	92 00	July	2 bu. potatoes (Personal)	9 00
8/28	Bought 935 lb. shorts	30 40	May	Pork (170 lb.)	37 40
9/9	Bought 8½ bu. corn (acct.)	12 50	Apr.	2½ bu. potatoes (Personal)	12 37
9/9	Bought 100 lb. hog feed	3 75	Mar.	1½ bu. potatoes (Personal)	4 50
9/9	Bought 100 lb. oil meal	4 00	11/30	Sold harness tugs	2 50
10/11	Bought 572 bu. oats (Oats)	286 00	2/28	Inventory	544 98
11/2	Bought 195½ bu. corn (Cash)	156 50		Feed to Horses	477 52
11/12	980 bu. corn (Hill Corn)	637 00		Feed to Cattle	742 03
11/13	Cornstalks and straw	12 00		Feed to Hogs	1135 23
11/20	14680 lb. corn	110 10		Feed to Poultry	55 31
12/19	240 bu. corn	150 00		Loss	361 21
2/28	Shelling corn	6 70			
2/28	50 bu. potatoes (Potatoes)	50 00			
	42½ hr. man-labor	11 56			
	46 hr. horse-labor	10 97			
	46 hr. equipment-use	4 26			
	Int. 6% on \$1000	60 00			
	Use of buildings	29 25			
	Silage	413 92			
		<u>\$3589 60</u>			<u>\$3589 60</u>

FARM ACCOUNTING

ACCOUNT: HORSES

3/1	Inventory	\$830 00	3/10	Sold 3 horses (Bills Rec.)	\$405 00
4/30	Tax	1 35	2/28	Inventory	410 00
7/23	Fly net	1 40		62 loads manure	93 00
7/31	Shoeing horses	2 00		138 hr. @ 23.85¢ (Hogs)	32 91
7/31	Veterinary services	13 00		46 hr. (Supplies)	10 97
10/31	Tax	1 45		8 hr. @ 23.85¢ (Equipment)	1 91
11/6	Shoeing horses	3 00		165 hr. @ 23.85¢ (Silage)	39 35
11/23	Setting shoes	53		677½ hr. @ 23.85¢ (Hill Corn)	161 58
	Feed for year (Supplies)	477 52		259 hr. @ 23.85¢ (Drill Corn)	61 77
	Pasture (Land)	110 00		271½ hr. @ 23.85¢ (Oats)	64 75
	566½ hr. man-labor	154 09		57 hr. @ 23.85¢ (Alfalfa)	13 59
	42½ hr. equipment-use @ 6¢ (estimated)	2 55		103 hr. @ 23.85¢ (Hay)	24 57
	Use of buildings (estimated)	21 00		20 hr. @ 23.85¢ (Land)	4 77
	Int. 6% on \$450	27 00		8 hr. @ 23.85¢ (Buildings)	1 91
				27 hr. @ 23.85¢ (Garden)	6 44
				12 hr. @ 23.85¢ (Gen. Farm)	2 86
				57 hr. @ 23.85¢ (Marketing)	13 59
				190 hr. @ 23.85¢ (Personal)	45 32
				370½ hr. @ 23.85¢ (Manure)	88 36
				157 hr. @ 23.85¢ (Fall Plow)	37 44
				14½ hr. @ 23.85¢ (Poultry)	3 40
				131½ hr. @ 23.85¢ (Cattle)	31 36
				61½ hr. @ 23.85¢ (Potatoes)	14 07
				312 hr. @ 23.85¢ (Outside Labor)	74 41
				Loss	00
		\$1644 89			\$1644 89

ACCOUNT: INTEREST

3/1	Int. on mortgage	\$340	50	8/11	Int. on note for cattle	\$26	60
3/4	Int. on note in bank	40	83	8/12	Int. on note for horse	16	60
11/1	Int. on note	50	00		Horses	27	00
11/1	Int. on note for hog	5	25		Buildings	354	00
2/26	Int. on note	13	50		Land	900	00
	Gain	125	62		Equipment	63	00
					Poultry	6	00
					Cattle	96	00
					Hill Corn	6	00
					Drill Corn	2	00
					Auto	30	00
					Oats	3	00
					Silage	2	50
					Hogs	60	00
					Supplies	60	00
		<u>\$17</u>	<u>12</u>			<u>\$17</u>	<u>12</u>
			<u>30</u>				<u>30</u>

ACCOUNT: CASH

March 1	Cash on hand	\$1974	80	28/2	Cash expenditures	\$4550	26
	Cash receipts	4646	44		Cash on hand	1431	93
					Cash to Personal	639	05
		<u>\$6621</u>	<u>24</u>			<u>\$6621</u>	<u>24</u>

ACCOUNT: POULTRY

3/1	Inventory	\$106 00	2/28	Inventory	\$93 75
4/30	Tax	15		Cash sales, poultry products	165 32
5/7	Poultry tonic	1 50		Poultry products to Personal	64 98
10/31	Tax	16			
	Supplies	55 31			
	209½ hr. man-labor	56 98			
	Marketing, man-labor	8 73			
	14½ hr. horse-labor	3 46			
	Marketing, horse-labor	2 72			
	14½ hr. equipment-use	1 34			
	Marketing, equipment-use	1 06			
	Int. 6% on \$100	6 00			
	Use of buildings	11 70			
	Auto marketing	14 93			
	Gain	54 01			
		<u>\$324 05</u>			<u>\$324 05</u>

ACCOUNT. INVENTORY

2/28	Bills Payable (1920)	\$7375 00	3/1	Land	\$16000 00
	Land	16000 00	(1920)	Buildings	5900 00
(1921)	Buildings	5890 00		Horses	830 00
	Equipment	1075 00		Cattle	1512 50
	Cattle	1660 00		Hogs	692 50
	Bills Receivable (1921)	405 00		Poultry	106 00
	Poultry	91 75		Equipment	1040 50
	Auto	400 00		Auto	500 00
	Supplies	544 98		Supplies	1050 49
	Horses	410 00		Bills Payable (1921)	5780 00
	Hogs	723 00		Accounts Payable (1921)	168 98
	Accounts Receivable (1921)	14 00		Cash on hand	1974 80
	Seasonal Work	420 27		Gain	887 16
	Cash	1431 93			
		<u>\$36,442 93</u>			<u>\$36,442 93</u>

ACCOUNT LOSS AND GAIN

	Drill Corn	\$118 14		Equipment	\$1 54
	General Farm	144 98		Labor	64
	Cattle	140 45		Poultry	54 01
	Hogs	72 35		Hill Corn	65 19
	Horses	90		Garden	459 54
	Supplies	361 21		Potatoes	51 46
	Hay	26 75		Buildings	96
	Outside Labor	56 44		Land	44
	Net Gain	1130 93		Interest	1256 22
				Oats	141 34
				Alfalfa	20 81
		<u>\$2052 15</u>			<u>\$2052 15</u>

FARM ACCOUNTING

ACCOUNT: LABOR

5/31	Paid wages	\$1 00	310½	hr. @ 27.2¢	Outside Labor	\$84 46
6/30	Paid berry pickers	14 40	633	hr. @ 27.2¢	to Hogs	172 18
7/31	Paid for hired labor	35 00	42½	hr. @ 27.2¢	to Supplies	11 56
Sept.	Paid for hired labor	8 00	65½	hr. @ 27.2¢	to Equipment	17 75
11/30	Paid corn huskers	12 00	13	hr. @ 27.2¢	to Auto	3 54
1/6	Paid for work on well	2 00	136	hr. @ 27.2¢	to Silage	36 99
2/28	Paid for labor	81 90	304½	hr. @ 27.2¢	to Hill Corn	82 78
	Operator's wages	900 00	95½	hr. @ 27.2¢	to Drill Corn	25 98
	Operator's board	240 00	169½	hr. @ 27.2¢	to Oats	46 10
	Unpaid family labor	300 00	41½	hr. @ 27.2¢	to Alfalfa	11 29
	Board, unpaid labor	90 00	77½	hr. @ 27.2¢	to Hay	21 08
	Gain	64	80½	hr. @ 27.2¢	to Land	21 90
			107½	hr. @ 27.2¢	to Buildings	29 31
			453½	hr. @ 27.2¢	to Garden	123 28
			101½	hr. @ 27.2¢	to General Farm	27 54
			160½	hr. @ 27.2¢	to Marketing	43 66
			264½	hr. @ 27.2¢	to Personal	71 94
			158½	hr. @ 27.2¢	to Manure	43 04
			40	hr. @ 27.2¢	to Fall Plow	10 88
			2076½	hr. @ 27.2¢	to Cattle	564 81
			209½	hr. @ 27.2¢	to Poultry	56 98
			87½	hr. @ 27.2¢	to Potatoes	23 80
			566½	hr. @ 27.2¢	to Horses	154 09
		\$1684 94	5884			\$1684 94

ACCOUNT: OUTSIDE LABOR

310½ hr. man-labor @ 27.2¢	\$84 46	7/31	Received cash	\$35 91
312 hr. horse-labor @ 23.85¢	74 41	Oct.	Received cash	61 00
312 hr. equipment-use @ 9.26¢	28 89	11/24	Received cash	18 75
		12/10	Received cash	1 00
		1/25	Received cash	14 66
			Loss	56 41
	\$187 76			\$187 76

ACCOUNT: OATS, FIELDS E AND K

5/5	60 bu. seed	\$54 00	Sept.	Received hail insurance	\$301 45
7/27	60 lb. twine	8 70	10/11	572 bu. to Supplies	286 00
9/9	Hail insurance	35 00			
10/13	Threshing bill	20 08			
	169½ hrs. man-labor	46 10			
	271½ hrs. horse-labor	64 75			
	271½ hrs. equipment-use	25 14			
	Use of land	189 34			
	Int. 6% on \$100 for 6 mo.	3 00			
	Gain	141 34			
		\$587 45			\$587 45

ACCOUNT: ALFALFA, FIELD A

41½ hr. man-labor	\$11 29	7/23	5½ T. to Supplies	\$92 00
57 hr. horse-labor	13 59			
57 hr. equipment-use	5 28			
Use of land	28 05			
Manure	12 98			
Gain	20 81			
	<u>\$92 00</u>			<u>\$92 00</u>

ACCOUNT: HAY, FIELD D

77½ hr. man-labor	\$21 08	7/23	17½ T. to Supplies	\$140 00
103 hr. horse-labor	24 57		Loss	26 75
Use of land	111 56			
103 hr. equipment-use	9 54			
	<u>\$166 75</u>			<u>\$166 75</u>

ACCOUNT: PERSONAL

7/6	6490 lb. coal (acct.)	\$37 50	Oct	Received premium	\$10 00
7/31	Telephone (½ total)	5 45		Operator's wages	900 00
July	2 bu. potatoes	9 00		Operator's board	240 00
Aug.	1½ bu. potatoes	1 88		Unpaid family labor	300 00
May	170 lb. pork	37 40		Board, unpaid labor	90 00
Apr.	2½ bu. potatoes	12 37		Balance	243 77
Mar.	1½ bu. potatoes	4 50			
Sept.	1½ bu. potatoes	1 93			
Oct.	2½ bu. potatoes	2 00			
Nov.	3 bu. potatoes	3 00			
Nov.	238 lb. pork	40 46			
12/14	Telephone	2 50			
Dec.	4 bu. potatoes	2 40			
Jan.	4½ bu. potatoes	4 50			
2/7	Gas for lighting plant	5 00			
Feb.	2 bu. potatoes	2 00			
	231 lb. pork	36 96			
	Dairy products (year)	118 80			
	Poultry products	64 98			
	264½ hr. man-labor	71 94			
	190 hr. horse-labor	45 32			
	190 hr. equipment-use	17 59			
	Use of buildings	468 00			
	Use of auto	149 24			
	Cash for year	639 05			
		<u>\$1783 77</u>			<u>\$1783 77</u>

FARM ACCOUNTING

ACCOUNT: FARMER'S ELEVATOR

6/18	Cash on acct.	\$49	78	4/14	Clover seed	\$62	00
7/9	Cash on acct.	50	30	4/14	Timothy seed	5	98
7/24	Cash on acct.	9	82	5/15	100 lb. shorts	3	00
	Bal. Accounts Payable	168	98	5/15	Salt	3	60
				5/15	4 grain sacks	2	80
				6/5	200 lb. Red Dog	7	50
				6/5	700 lb. shorts	22	75
				7/6	6400 lb. coal	37	50
				7/6	1000 lb. shorts	35	50
				7/19	600 lb. Red Dog	25	50
				7/19	1500 lb. shorts	52	50
				9/9	8½ bu. corn	12	50
				9/9	100 lb. hog feed	3	75
				9/9	100 lb. oil meal	4	00
		\$278	88			\$278	88

ACCOUNT: WALTER JAMES

12/10	4 pigs	\$14	00		Accounts Receivable	\$14	00
		\$14	00			\$14	00

ACCOUNT: SILAGE

10/23	65 tons silage	\$273	00		Supplies	\$413	92
	136 hr. man-labor	30	99				
	165 hr. horse-labor	39	35				
	165 hr. equipment-use	15	28				
	Int. 6% on \$250, 2½mo.	2	50				
	Use of buildings	46	80				
		\$413	92			\$413	92

ACCOUNT: BILLS RECEIVABLE

3/10	Note for horses	\$405	00		By cash	\$655	00
3/11	Note for cattle	655	00		Inventory	405	00
		\$1060	00			\$1060	00

ACCOUNT: BILLS PAYABLE

3/14	Paid note at bank	\$900	00	3/1	Inventory	\$7375	00
2/26	Paid note at bank	800	00	3/27	Note for sow	105	00
2/1	Inventory	5780	00				
		\$7480	00			\$7480	00

LABOR RECORD: BUILDINGS

DATE	M	H	DATE	M	H	DATE	M	H	DATE	M	H
4/5	1	0	10/17	1	0	12/2	3	0			
4/6	2	0	10/31	7	0	12/3	8	0			
4/8	1	0	11/1	7	0	12/8	3	0			
4/22	2	0	11/2	$\frac{1}{2}$	0	12/10	1	0			
4/26	2	0	11/5	1	2	12/28	3	0			
5/2	$1\frac{1}{2}$	0	11/6	3	6	1/1	1	0			
5/4	2	0	11/8	$1\frac{1}{2}$	0	1/6	$8\frac{1}{2}$	0			
6/8	1	0	11/9	$2\frac{1}{2}$	0	1/19	1	0			
6/10	6	0	11/11	4	0	1/20	1	0			
6/14	1	0	11/20	3	0	1/23	2	0			
8/23	4	0	11/22	4	0	1/27	2	0			
8/25	8	0	11/29	5	0	1/28	$2\frac{1}{2}$	0			
9/2	$\frac{1}{2}$	0									
						Total	107	8			

LABOR RECORD: LAND

DATE				M	H	DATE				M	H
4/17	Repairing	fence		2	0	9/16	Repairing	ditch		5	0
5/16	"	"		1	0	10/29	Fencing			4	0
5/18	"	"		3	0	10/30	"			4	0
5/27	Taking up	fences		$2\frac{1}{2}$	0	11/2	"			1	0
5/28	Repairing	fences		$\frac{1}{2}$	1	11/20	Opening tile outlet			2	0
6/3	Repairing	fences		1	0	11/29	Taking up fence			$1\frac{1}{2}$	0
6/4	Building	fences		14	0	1/22	Cleaning tile			6	0
6/9	Building	fences		10	10	1/23	Farm drainage			5	0
6/9	Buying posts			2	0	1/26	Taking up tile			7	9
6/11	Fencing			3	0	2/4	Fence			1	0
6/16	Digging ditch			1	0		Total			$80\frac{1}{2}$	20
8/18	Fencing			4	0						

LABOR RECORD: CATTLE

CHORES				SPECIAL WORK				SPECIAL WORK CONT.					
		DATE		M	H	M	H	DATE	M	H			
				DAILY	TOTAL								
Mar.	1 to	Mar. 31		5	0	155	0	3/10	4	0	12/10	4	0
Apr.	1 to	Apr. 30		4	0	120	0	3/12	3	0	12/11	4	0
May	1 to	May 31		6	0	201	0	3/20	5	5	12/13	1	0
June	1 to	June 30		5	0	170	0	3/20	1	0	12/17	1	2
July	1 to	July 31		5	0	170	0	3/30	3	0	12/23	2	0
Aug.	1 to	Aug. 31		5	0	155	0	4/3	2	0	1/8	3	0
Sept.	1 to	Sept. 30		5	0	157	0	5/7	5	0	1/28	6	0
Oct.	1 to	Oct. 31		5	0	170	0	5/12	1	0	1/20	7	0
Nov.	1 to	Nov. 30		4	0	135	0	5/22	1	0	2/12	2	0
Dec.	1 to	Dec. 31		4	0	147	0	6/6	8	0	2/20	2	0
Jan.	1 to	Jan. 31		8	0	255	0	7/30	3	0	2/24	2	0
Feb.	1 to	Feb. 28		2	0	63	0	7/31	2	0	Total	88	10
Total						1901	0	8/10	1	0			
								8/13	1	0			
								8/17	2	0			
								9/3	1	0			
								9/7	1	0			
								9/10	1	1			
								9/13	1	2			
								10/2	6	0			
								11/19	4	0			
HAULING FEED				HAULING FEED CONT.				SUMMARY					
DATE		M	H	DATE		M	H						
3/2		5	6	11/11		2	0	9/7	1	0			
3/17		3	6	11/12		4	8	9/10	1	1	Chores	1901	0
3/24		4	8	12/1		4	4	9/13	1	2	Feed	87	121
3/25		4	8	1/3		6	12	10/2	6	0	Special	88	10
4/7		1	0	1/5		2	4					2076	131
4/9		6	6	1/6		2	4						
4/14		2	0	1/11		2	4						
4/17		4	4	1/20		9	11						
4/28		1	1	2/2		4	8						
5/29		5	10	2/28		13	13						
10/14		2	4	Total		87	121						
10/19		2	0										

LABOR RECORD: POTATOES

PREPARING SEED			PLANTING			CULTIVATING			DIGGING		
DATE	M	H	DATE	M	H	DATE	M	H	DATE	M	H
5/5	2		4/15	1	0	6/28	3	6	8/2	1	0
5/6	4		5/7	2	4				9/27	10	11
Total	6	0	Total	3	4	SUMMARY			9/28	24	11
DRAGGING			SPRAYING			Seed	6	0	9/29	15	20
DATE	M	H	DATE	M	H	Dragg	1	1	10/17	6	0
5/7	1	1	7/2	8	8	Planting	3	4	Total	56	42
			7/3	2	0	Cultivating	3	6	MISCELLANEOUS		
			Total	10	8				11/20	sacking	1
						Spraying	10	8			0
						Digging	56	42	11/22	marketing	4
						Misc.	9	0			0
						Total	87	61	11/23	4	0
									Total	9	0

LABOR RECORD: HILL CORN FIELD(I)

PREPARING SEED						DISKING			DRAGGING AND HARROWING			PLANTING		
DATE	M	H	DATE	M	H	DATE	M	H	DATE	M	H			
4/2	1	0	5/6	3	12	5/14	3	12	5/15	4	16			
CULTIVATING			5/8	7½	30	5/18	1	3	5/17	7	14			
			5/10	7½	30	5/21	7	21	5/18	4	8			
			5/13	4½	18	5/25	1½	3	Total	15	38			
6/6	4	8	Total	22½	90	5/27	6½	19½	SUMMARY					
6/7	20	40	PICKING			5/28	8	32						
6/8	16	32				Total	26½	90½						
6/12	13½	27	10/2	4	0	CUTTING			Seed	1	0			
6/19	10½	21	10/23	9	9				Disking	15	38			
6/21	8	16	9/20	1	0				DATE	M	H	Draggng	26½	90½
6/22	6	12	9/24	2	0	Total			Cultivat-					
6/23	12	24	10/1	2	0				8/27	2½	5	ing	153	306
6/25	6	12	10/7	6	6				8/30	½	1	Picking	77	147
6/26	6	12	10/9	2	0	Total	3	6	Cutting	3	6			
6/30	2	4	10/25	7	8	MISCELLANEOUS			Misc.	6	0			
7/3	10	20	10/28	27	90				Total	304½	677½			
7/10	6½	13	11/12	4	8				DATE	M	H			
7/12	8	16	11/15	5	10	12/24	6	0						
7/13	10	20	11/18	8	16									
7/15	8	16	Total	77	147									
7/16	6½	13												
Total	153	306												

LABOR RECORD: DRILL CORN FIELD(J)

PLOWING			PREPARING SEED			PLANTING			SUMMARY		
DATE	M	H	DATE	M	H	DATE	M	H	DATE	M	H
5/17	2	4	5/22	1	1	5/29	4	8	Plowing	47½	152
5/24	5½	22	DRAGGING AND HARROWING			6/3	1	2	Seed	1	1
5/26	20	65				Total	5	10	Disking	1½	4½
5/27	14	40	DATE	M	H	CULTIVATING			Draggng	16½	43½
5/28	3	12	5/25	4	8				Planting	5	10
6/3	3	9	5/27	2	6				Cultivat-		
Total	47½	152	5/28	5	10	DATE	M	H	ing		
DISKING			6/1	3½	14	6/17	8	16	Total	95½	259
			6/3	1½	4½	6/18	16	32			
DATE	M	H	6/3	½	1	Total	24	48			
6/3	1½	4½	6/4	½	1						
			Total	16½	43½						

LABOR RECORD: EQUIPMENT

DATE	WORK	M	H	DATE	WORK	M	H
3/2	Repairing manure sprdr.	4	0	8/2	Storing	1	0
3/3	Repairing engine	2	0	8/27	Repairing corn binder	1½	0
3/6	Getting plow	1	0	9/2	Painting wagon	½	0
4/15	Bringing home plow	3	0	9/3	Repairing and oiling wagon	4	0
4/19	Repairing harness	1	0	9/18	Repairing corn binder	2½	0
4/22	Repairing evener	1	0	9/20	Sharpening knives	2	0
4/23	Repairing drag	½	0	9/23	Painting wagon	1	0
5/2	Repairing harness	1	0	10/2	Storing corn binder	1	0
5/22	Repairing manure sprdr.	1	0	10/2	" silage cutter	1	0
5/27	Repairing corn planter	2	0	10/5	" machinery	2	0
6/4	Repairing corn plow	1	0	10/27	Repairing engine	2	0
6/6	Buying Cultivator	1	0	10/28	" corn picker	1	0
6/14	Working on mower	1	0	12/22	" " sheller	1	0
6/17	Working on mower	2	0	12/23	Working on engine	2	0
7/12	Sharpening sickles	1	0	12/24	Buying gas for engine	1	1
7/14	Repairing hay loader	1	2	1/1	W'k'g on corn sheller	2	0
7/15	Repairing hay loader	3	0	1/7	Repairing machinery	½	0
7/17	Repairing mower	2	0	1/11	" harness	1	0
7/19	Repairing stacker	1½	3	1/27	" harness	1	0
7/19	Repairing rake	1	2	1/31	" wagon	¾	0
7/20	Sharpening sickles	1	0	2/8	Setting up sleigh	½	0
7/21	Repairing stacker	1	0	Total		65½	8
7/29	Repairing binder	3	0				

MINOR LABOR RECORDS

EXCHANGE LABOR			AUTO			SILAGE					
DATE	M	H	DATE	M	H	CUTTING			FILLING		
						DATE	M	H	DATE	M	H
3/18	6	12	3/26	2	0	9/20	13	39	9/20	13	0
3/23	6	6	4/8	1	0				9/21	80	100
2/21	3	6	4/11	4	0	SUMMARY			9/22	30	26
2/22	5	10	4/12	4	0	Cutting	13	39	Total	123	126
Total	20	34	4/29	1	0	Filling	123	126			
			4/29	1	0	Total	136	165			
			Total	13	0						

LABOR RECORD: GARDEN

DATE	M	H	DATE	M	H	DATE	M	H	DATE	M	H
4/15	2	4	6/15	4	0	7/8	3	0	8/18	4	0
4/16	2	0	6/16	9	0	7/9	4	0	8/23	3	0
4/30	5	4	6/18	10	0	7/10	6	0	8/24	3	0
5/3	3½	0	6/19	9½	0	7/12	5	0	8/26	4	0
5/10	7	0	6/21	25	0	7/12	4	0	8/28	1	0
5/19	6	0	6/22	25½	0	7/13	5½	0	8/30	8	0
5/20	4	0	6/23	17½	0	7/14	3	0	9/1	3	0
5/22	1	0	6/24	32	0	7/14	1	0	9/2	4	0
5/24	1½	0	6/25	25	0	7/15	2	0	9/13	2	0
5/25	4½	0	6/26	2	0	7/16	1	1	9/15	3	0
5/26	6½	0	6/27	7½	0	7/16	5½	0	9/20	2	0
5/27	4	0	6/28	15	0	7/17	2	0	9/22	2	0
5/29	2	0	6/29	17½	0	7/18	4	0	9/23	2	0
6/2	4	0	6/30	4	0	7/19	7	0	9/28	1	0
6/3	3½	0	6/30	14½	0	7/20	3	0	10/22	1½	0
6/8	2½	0	7/1	17	0	7/21	3½	0	10/27	2	0
6/9	4	0	7/2	4	0	7/23	2½	0	11/3	2	4
6/10	3	0	7/2	6	0	7/24	3½	0	11/4	2	4
6/11	2½	0	7/3	2	0	7/27	2	0	11/5	2	4
6/12	6½	0	7/3	6½	0	7/28	2	0	Total	453½	27
			7/6	2	0	7/29	2	0			

LABOR RECORD: GENERAL FARM

DATE	M	H	DATE	M	H	DATE	M	H	DATE	M	H
3/5	2	0	7/24	1	0	9/18	4	0	11/16	6	0
3/30	3	0	7/31	3	0	10/4	4	0	11/20	1	0
4/23	4	0	8/21	3	6	10/5	6	0	1/29	3½	0
6/10	6	0	9/3	6	0	10/6	9	0	2/14	2	0
6/29	2	0	9/4	4	0	11/6	2	0	2/21	3	6
7/6	1	0	9/13	4	0	11/7	4	0	Total	101½	12
7/21	3	0	9/14	11	0	11/10	4	0			

LABOR RECORD: HOGS

CHORES				SPECIAL WORK				SPECIAL WORK CONT.			
DATE				DAILY M H	TOTAL M H	DATE		M H	DATE		M H
Mar. 1 to Mar. 31	1	0	46	1	0	3/8		2 0	9/13	1	2
Apr. 1 to Apr. 30	2	0	60	0	0	3/10		2 0	9/23	3	0
May 1 to May 31	2	0	62	0	0	3/16		6 6	9/24	2	4
June 1 to June 30	1	0	52	1	0	3/22		2 0	9/27	2	4
July 1 to July 31	1	0	46	1	0	3/24		2 0	10/3	3	0
Aug. 1 to Aug. 31	1	0	46	1	0	3/26		4 0	10/12	2	0
Sept. 1 to Sept. 30	3	0	20	0	0	3/29		2 0	11/2	1	0
Oct. 1 to Oct. 31	1	0	15	1	0	3/31		2 0	11/3	3	0
Nov. 1 to Nov. 30	1	0	15	0	0	4/1		9 0	11/8	1	0
Dec. 1 to Dec. 31	1	0	15	1	0	4/3		1 0	11/13	2	0
Jan. 1 to Jan. 31	1	0	46	1	0	4/5		1 0	11/14	2	0
Feb. 1 to Feb. 28	2	0	21	0	0	4/9		1 0	11/16	2	0
Total			447	1	0	4/17		1 0	11/17	4	8
						4/19		1 0	11/18	1	0
						4/26		1 0	11/20	2	0
						4/27		3 0	12/10	1	0
						4/29		1 0	12/28	3	0
						4/30		2 0	12/20	4	0
						5/12		1 0	1/7	2	4
						5/13		14 16	1/8	2	4
						5/16		2 0	1/19	2	0
						6/1		2 0	1/20	1	0
						6/11		8 0	2/2	1	0
						6/26		1 0	2/8	1	0
						6/29		2 0	2/9	34	68
						9/2		2 3	2/10	1	0
						9/6		1 0	2/11	5	0
						9/10		1 1	2/24	2	0
									Total	168	120

HAULING AND FIXING FEED

DATE	M	H
3/8	4	1
3/29	2	4
4/23	1	0
5/28	3	7
6/4	1	0
3/12	1	0
8/26	1	0
12/29	1	2
12/30	2	4
Total	17	18

SUMMARY

Chores	447	1	0
Special	168	120	
Feeds	17	18	
Total	633	138	

LABOR RECORD: SUPPLIES

DATE	M	H	DATE	M	H	DATE	M	H	DATE	M	H
6/9	1	0	7/22	2	2	12/22	1	0	1/11	1	0
7/7	4	8	7/24	1	0	12/27	2	0	1/18	18	36
7/9	1	0	8/11	3	0	1/1	2	0	Total	42	46
7/14	1	0	8/18	3	0	1/8	2	0			

LABOR RECORD: HORSES

CHORES								HAULING AND PREPARING FEED				SPECIAL WORK			
DATE				DAILY M	H	TOTAL M	H	DATE		M	H	DATE		M	H
Mar.	1	to	Mar.	31	2	0	62	0	3/9	1	2	3/12		1	0
Apr.	1	to	Apr.	30	3	0	90	0	3/12	4	4	3/18		1½	0
May	1	to	May	31	1½	0	46½	0	3/29	1	2	3/19		2½	5
June	1	to	June	30	1	0	30	0	3/30	2	0	4/2		1	0
July	1	to	July	31	1	0	31	0	4/7	1	2	4/3		2	0
Aug.	1	to	Aug.	31	1	0	31	0	4/9	6	6	4/13		10	5
Sept.	1	to	Sept.	30	1½	0	45	0	4/24	1	2	4/27		1½	0
Oct.	1	to	Oct.	31	1½	0	46½	0	5/1	1½	1½	5/20		1	0
Nov.	1	to	Nov.	30	1½	0	36	0	5/19	1	2	9/10		½	0
Dec.	1	to	Dec.	31	1½	0	38½	0	8/17	1	0	1/8		2	0
Jan.	1	to	Jan.	31	1	0	31	0	8/30	1	0	Total		23	10
Feb.	1	to	Feb.	28	1	0	28	0	11/27	1½	3				
Total							515½	0	12/2	2	4	SUMMARY			
									12/29	1½	4	Chores	515½	0	
									2/3	2½	0	Special	23	10	
										27½	32½	Feeds	27½	32½	
												Total	566½	42½	

LABOR RECORD: POULTRY

CHORES								SPECIAL WORK				SPECIAL WORK CONT.			
DATE				DAILY M	H	TOTAL M	H	DATE		M	H	DATE		M	H
Mar.	1	to	Mar. 31	1 1/2	0	15 1/2	0	3/6		4	4	7/16		1 1/2	0
Apr.	1	to	Apr. 30	2 3/4	0	20	0	3/13		2 1/2	0	7/23		1 1/2	0
May	1	to	May 31	1 1/2	0	15 1/2	0	3/22		2 1/2	2 1/2	7/31		1	0
June	1	to	June 30	1 1/2	0	15	0	3/25		4	0	8/2		1	0
July	1	to	July 31	3 3/4	0	23 1/2	0	4/5		1 1/2	0	9/4		1 1/2	0
Aug.	1	to	Aug. 31	1 1/2	0	15 1/2	0	4/14		2 1/2	0	10/19		2	0
Sept.	1	to	Sept. 30	1 1/4	0	7 1/2	0	4/17		1	0	10/22		1 1/2	0
Oct.	1	to	Oct. 31	0	0	0	0	4/24		1	0	11/2		1	0
Nov.	1	to	Nov. 30	0	0	0	0	5/1		4	0	1/8		2	4
Dec.	1	to	Dec. 31	1 1/2	0	15 1/2	0	5/15		1	0	2/15		2	4
Jan.	1	to	Jan. 31	1 1/2	0	15 1/2	0	5/18		1 1/2	0	2/23		1 1/2	0
Feb.	1	to	Feb. 28	8/8		17	0	5/22		1	0	Total		49 1/2	14 1/2
Total						160 1/2	0	5/27		1	0	SUMMARY			
								6/5		1	0	Chores	160 1/2	0	
								6/24		7 1/2	0	Special	49 1/2	14 1/2	
								7/6		1	0	Total	209 1/2	14 1/2	

LABOR RECORD: MARKETING

DATE	AUTO TRIP	M	H	DATE	AUTO TRIP	M	H	DATE	AUTO TRIP	M	H	DATE	AUTO TRIP	M	H
3/6		2	4	6/5	I	2		8/14	I	2		12/19	I	2	
3/9	I	2½		6/8	I	2		8/17	I	2		12/30		3	3
3/13	I	2½		6/10	I	I		8/21	I	3		1/5		I	2
3/19		2½	5	6/12	I	I		8/26	I	2		1/21		3	3
3/22		2½	2½	6/15	I	I		8/28	I	2		1/25		3	3
3/26		2	4	6/18	I	I		9/1	I	2		1/28		3	3
3/27	I	4		6/22	I	I		9/4	I	1½		1/31	I	2	
3/31		2½	2½	6/24	I	½		9/6	I	2		2/2	I	1½	
4/5	I	1½		6/26	I	I		9/9	I	1½		2/4	I	2	
4/8	I	2		6/29	I	I		9/25	I	2		2/7	I	3	
4/14	I	2½		7/1	I	I		9/30	I	3		2/11	I	3	
4/17	I	I		7/6	I	I		10/16	I	4		2/15		2	4
4/20		3½	7	7/9	I	I	2	10/19	I	2		2/19		4	4
4/24	I	1½		7/13	I	I		10/26	I	2		2/23	I	1½	
4/29	I	2		7/16	I	I		10/29	I	4		2/25	I	3	
5/3	I	½		7/19	I	I		11/2	I	I		2/26	I	4	
5/7	I	2		7/23	I	I		11/6	I	2		Total	66	160½	57
5/12	I	4		7/24	I	I		11/9	I	2					
5/15	I	I		7/31	I	I		11/15	I	2					
5/18	I	I		8/2	I	I		11/20	I	2					
5/27	I	I		8/10	I	I		11/30		2	4				
6/2		2	4	8/12	I	2		12/14	I	3					

LABOR RECORD: PERSONAL

DATE		M	H	DATE		M	H	DATE		M	H	DATE		M	H
3/3		2	0	7/8		4	8	11/9		I	0	12/30		3	3
3/5		4	8	7/9		3½	7	11/13		3	0	1/4		25½	0
3/9		I	0	7/10		2	0	11/25		5	10	1/5		I	2
3/26		2	4	7/21		1½	0	11/30		12	0	1/8		3	6
3/31		2½	2½	8/23		5	10	12/4		0	10	1/12		3	0
4/6		3	0	8/24		4	8	12/9		4	0	1/20		1½	I
4/10		3	0	9/20		1½	0	12/11		4	0	1/21		5	10
4/12		12	0	10/9		2	0	12/13		16	0	1/22		3	0
4/20		3½	7	10/27		3	0	12/14		10	8	1/25		3	6
4/22		I	0	10/31		2	0	12/15		16	8	1/27		7	0
4/26		2	0	11/3		6½	0	12/16		16	16	2/1		29	48
4/28		1½	0	11/4		4	0	12/17		4	0	2/2		3	6
4/30		½	0	11/8		4	0	12/19		2	0	2/3		2	0
5/21		1½	0					12/24		0	1½	Total		264½	190

LABOR RECORD: OUTSIDE LABOR

DATE		M	H	DATE		M	H	DATE		M	H	DATE		M	H
3/1		1	0	8/17		2½	0	10/9		8	0	11/24		8	16
3/14		4	0	8/19		8	8	10/11		6½	0	11/27		2	0
4/21		6	0	8/20		4½	0	10/12		5	0	12/4		8	8
4/27		4½	9	8/25		3	0	10/13		10	20	12/5		5	10
4/28		5	0	8/27		10	20	10/14		6	12	12/7		3½	0
5/24		9	0	8/28		5	10	10/15		3	0	12/9		3	0
7/21		5	10	8/30		7	14	10/25		5	0	12/31		1	0
7/22		4	8	8/31		8	6	10/26		6½	0	1/3		1	0
7/28		3	0	9/1		12	8	10/30		4	0	1/13		7	14
7/29		2½	0	9/2		5	10	11/4		2	0	1/14		7	14
8/9		10	20	9/15		4	0	11/10		2	0	1/15		6	12
8/11		3	0	9/22		5	0	11/13		1	0	1/17		5	10
8/13		9½	19	9/24		5	0	11/17		5	10	1/25		3	6
8/14		9	18	9/25		7	0	11/20		5	0	Total		310½	312
8/16		10½	12	10/8		6	0	11/23		4	8				

LABOR RECORD: HAULING MANURE

	FIELD A					FIELD J					FIELD F					FIELD C			
DATE	Lds.	M	H		DATE	Lds.	M	H		DATE	Lds.	M	H		DATE	Lds.	M	H	
3/12	4	3	6		5/17	5	4	16		5/29	12	10	20		8/19	1	1	2	
3/17	3	2	4		5/18	12	10½	42		6/2	4	3	6		8/20	8	7	14	
4/7	3	2	3		5/19	17	17	34		6/3	1	1	2		11/5	4	4	8	
4/8	3	2	4		5/20	18	18	36		6/16	4	3	6		11/15	2	2	4	
4/20	2	2	4		5/21	12	10	40		1/7	4	3	6		Total	15	14	28	
Total	15	11	21		5/22	14	14	28		1/12	2	2	4						
					5/24	17	15	40		1/21	4	3	6		SUMMARY				
					5/25	10	10	20		1/28	3	2½	4½		Fld. A	15	11	21	
					5/28	1	½	1		Total	34	27½	54½		" J	106	99	257	
12/1	3	4	4		Total	106	99	257							" F	34	27½	54½	
12/31	3	3	6												" C	15	14	28	
Total	6	7	10												" K	6	7	10	
															Total	176	158½	370½	

LABOR RECORD: FALL PLOWING

FIELD J			FIELD K			FIELD F			SUMMARY		
DATE	M	H	DATE	M	H	DATE	M	H	DATE	M	H
10/7	3	9	10/16	4	16	10/21	7	28	Field F	18	72
10/8	4	16	10/18	6	24	10/22	7 1/2	30	" K	10	40
10/15	5	20	Total	10	40	10/23	3 1/2	14	" J	12	45
Total	12	45				Total	18	72	Total	40	157

MONEY VALUES: MANURE AND FALL PLOWING

MANURE FIELD A			MANURE FIELD J			MANURE FIELD F			MANURE FIELD C		
15 loads	\$22	50	106 loads	\$159	00	34 loads	\$51	00	15 loads	\$22	50
11 hrs. M	2	99	99 hrs. M	26	93	27 1/2 hrs. M	7	41	14 hrs. M	3	81
21 hrs. H	5	01	257 hrs. H	61	29	54 1/2 hrs. H	13	00	28 hrs. H	6	68
21 hrs. E	1	94	257 hrs. E	23	80	54 1/2 hrs. E	5	05	28 hrs. E	2	59
	\$32	44		\$271	02		\$76	46		\$35	58
MANURE FIELD K			FALL PLOWING FIELD J			FALL PLOWING FIELD K			FALL PLOWING FIELD F		
6 loads	\$ 9	00	12 hrs. M	\$ 3	26	10 hrs. M	\$ 2	72	18 hrs. M	\$ 4	90
7 hrs. M	1	90	45 hrs. H	10	73	40 hrs. H	9	54	72 hrs. H	17	17
10 hrs. H	2	38	45 hrs. E	4	17	40 hrs. E	3	70	72 hrs. E	6	67
10 hrs. E		93		\$18	16		\$15	96		\$28	74
	\$14	21									

SEASONAL WORK RECORD

WORK OR MATERIAL	FIELD OR CROP	TIME DONE	1920		1921	
			INVENT VALUE	VALUE USED	INVENT. VALUE	VALUE USED
Grass Seeding	K	Sp'g 1920	\$67	98	\$67	98
Manure	A	Sp'g 1920	32	44	12	98
Manure	J	Sp'g 1920	271	02	108	41
Manure	F	Sp'g 1920	47	22	18	89
Manure	F	Fall 1920	29	24	0	00
Manure	C	Fall 1920	35	58	0	00
Manure	K	Fall 1920	14	21	0	00
Plowing	J	Fall 1920	18	16	0	00
Plowing	K	Fall 1920	15	96	0	00
Plowing	F	Fall 1920	28	74	0	00
					420	27

DAIRY PRODUCTS USED IN HOUSE

POULTRY PRODUCTS USED IN HOUSE

March	17½ qt. cream	\$9 80	March	11 doz. eggs	\$4 01
	16 qt. whole milk	1 29		8 lb. poultry	2 40
	17 qt. skim milk	23	Apr.	10 doz. eggs	3 56
April	14 qt. cream	6 62	May	10½ doz. eggs	3 64
	29 qt. whole milk	2 15	June	9½ doz. eggs	3 01
	20 qt. skim milk	30	July	7 doz. eggs	2 34
May	11½ qt. cream	4 86		13½ lb. poultry	3 37
	19 qt. whole milk	1 31	Aug.	4½ doz. eggs	1 80
	13 qt. skim milk	23		18 lb. poultry	5 40
	8 lb. butter	4 00		eggs (donated)	52
June	10½ qt. cream	4 73	Sept.	4½ doz. eggs	1 87
	19½ qt. whole milk	1 17		6½ lb. poultry	1 88
	3 qt. skim milk	05	Oct.	5½ doz. eggs	2 64
	7 lb. butter	2 80		27 lb. poultry	6 75
July	11½ qt. cream	4 83	Nov.	1½ doz. eggs	84
	30½ qt. whole milk	1 65		20 lb. poultry	5 00
	11 lb. butter	4 40	Dec.	4½ doz. eggs	3 24
Aug.	Cream (donated)	41		9½ lb. poultry	4 37
	Milk (donated)	29	Jan.	8½ doz. eggs	3 63
	7½ qt. cream	3 16		10½ lb. poultry	2 94
	29 qt. milk	1 65	Feb.	7½ doz. eggs	1 77
Sept.	9 qt. cream	7 55			\$64 98
	17½ qt. milk	87			
	15 lb. butter	6 75			
Oct.	12½ qt. cream	5 48			
	15½ qt. milk	78			
	23 qt. skim milk	18			
	8 lb. butter	4 72			
Nov.	14 qt. cream	5 56			
	15 qt. milk	75			
	32 qt. skim milk	12			
	2½ lb. butter	1 13			
Dec.	15½ qt. cream	5 12			
	25 qt. milk	1 20			
	37 qt. skim milk	57			
	12 lb. butter	4 92			
Jan.	19½ qt. cream	5 97			
	14½ qt. milk	64			
	15 qt. skim milk	20			
	4 lb. butter	1 52			
Feb.	15½ qt. cream	4 58			
	17½ qt. milk	62			
	10 qt. skim milk	14			
	10 lb. butter	3 52			
		\$118 80			

CASH SALES DAIRY

CASH SALES POULTRY

March	Cream	\$27 59	March	43½ doz. eggs	\$22 34
April	70.7 lb. butter fat	50 19	April	38 doz. eggs	14 05
May	Cream	60 04	May	38½ doz. eggs	14 49
June	15.6 lb. butter fat	7 94	June	27 doz. eggs	8 64
	Sweet cream	55 13	July	44 doz. eggs	15 32
July	263.9 lb. butter fat	146 94	Aug.	26½ doz. eggs	10 88
	10 lb. butter	4 50		Spring fryers	24 05
Aug.	117.9 lb. butter fat	63 84	Sept.	13 doz. eggs	5 92
	5 lb. butter	2 25		Chickens	9 24
Sept.	75.6 lb. butter fat	40 07		19 hens	4 37
Oct.	59.8 lb. butter fat	33 73	Oct.	11 doz. eggs	5 33
Nov.	30 lb. butter fat	17 10	Nov.	4 doz. eggs	2 15
Dec.	106.4 lb. butter fat	59 26	Jan.	41½ doz. eggs	19 24
Jan.	124.5 lb. butter fat	60 07	Feb.	32½ doz. eggs	9 30
Feb.	133.4 lb. butter fat	61 84			\$165 32
	50 lb. butter	17 50			
		\$707 96			

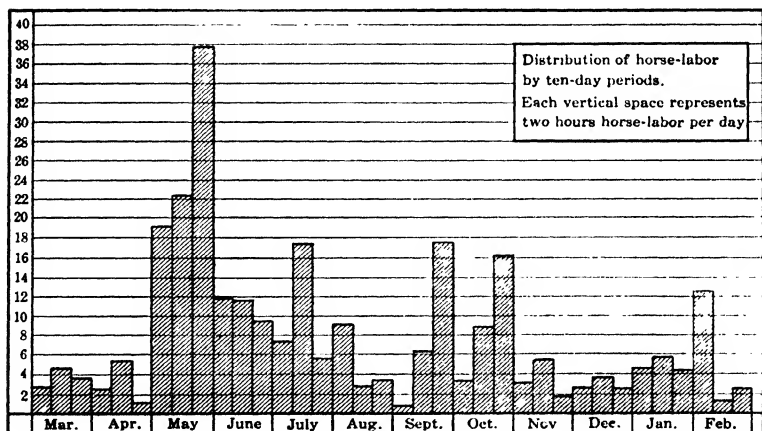
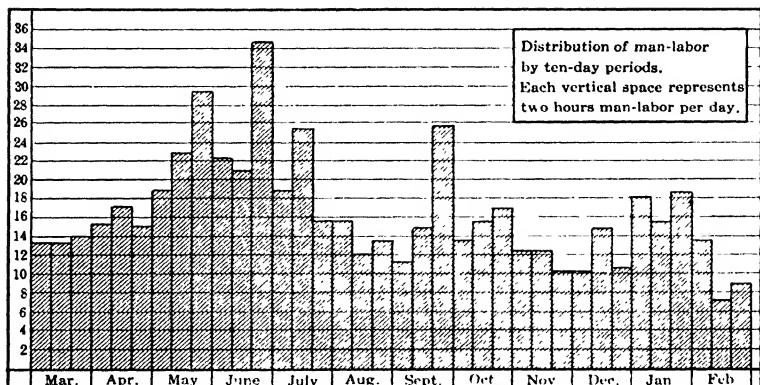
GENERAL LABOR RECORD

DA.	MARCH		APRIL		MAY		DA.	JUNE		JULY		AUG.	
	M	H	M	H	M	H		M	H	M	H	M	H
1	9	0	19	0	16	2	1	14	14	27	0	8	0
2	18	6	12	0	13	0	2	18	10	27	14	33	28
3	13	0	15	0	22	28	3	21	22	29	20	8	0
4	9	0	10	0	18	25	4	25	1	9	0	8	0
5	15	8	15	0	24	32	5	12	0	9	0	8	0
6	15	8	16	0	23	34	6	22	8	14	0	8	0
7	9	0	14	5	20	6	7	29	40	13	8	8	0
8	15	1	16	4	18	30	8	30	32	16	8	8	0
9	14	2	23	12	11	0	9	26	10	18	9	24	24
10	15	0	13	0	25	30	10	25	10	23	13	46	36
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11	12	25	153	21	190	187		222	147	185	72	150	88
12	9	0	14	0	11	0	11	22	0	9	0	19	8
13	20	10	26	0	17	0	12	30	27	29	20	11	0
14	14	0	20	5	29	34	13	9	0	29	27	9	0
15	9	0	17	0	14	12	14	11	0	23	10	10	0
16	9	0	16	4	17	10	15	14	0	31	30	8	0
17	15	6	17	20	14	0	16	22	6	37	26	8	0
18	14	10	19	4	24	34	17	21	20	18	10	13	0
19	11	0	10	0	31	53	18	36	32	13	0	19	0
20	14	10	12	0	35	36	19	36	24	43	38	9	2
21	15	6	19	14	31	36	20	9	0	22	15	15	14
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22	130	42	170	47	226	221		210	100	254	176	121	24
23	9	0	10	0	29	61	21	42	16	23	10	14	6
24	16	5	14	0	30	29	22	41	12	16	13	8	0
25	9	0	23	0	11	0	23	38	24	23	17	20	10
26	15	8	14	2	33	62	24	49	0	15	0	15	8
27	17	8	10	0	30	31	25	43	12	9	0	16	0
28	19	8	15	0	37	65	26	28	24	9	0	15	0
29	13	0	16	3	44	66	27	16	0	11	0	12	5
30	9	0	12	1	31	63	28	27	6	11	0	11	0
31	15	6	13	0	33	38	29	31	0	17	6	8	0
32	17	0	17	4	11	0	30	29	4	18	16	18	1
33	16	5			11	0	31			16	0	8	0
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	155	40	144	10	300	415		344	98	168	62	145	30

GENERAL LABOR RECORD (Continued)

DA.	SEPT.		OCT.		NOV.		DA.	DEC.		JAN.		FEB.	
	M	H	M	H	M	H		M	H	M	H	M	H
1	13	0	10	0	13	0	1	15	8	16	0	34	48
2	15	3	20	0	11	0	2	12	4	11	0	14	14
3	19	0	11	0	18	4	3	15	0	17	12	9	0
4	14	0	12	0	12	4	4	7	10	37	0	8	0
5	8	0	16	0	13	14	5	7	0	15	8	5	0
6	11	0	17	0	13	6	6	7	0	22	4	5	0
7	8	0	17	15	10	0	7	7	0	17	10	8	0
8	8	0	12	16	13	0	8	10	0	23	14	7	0
9	9	0	12	0	12	0	9	11	0	11	0	39	68
10	10	2	8	0	10	0	10	11	0	11	0	6	0
	115	5	135	31	125	28		105	22	180	48	135	130
11	8	0	44	24	12	0	11	15	0	16	4	13	0
12	8	0	10	0	14	10	12	7	0	16	4	7	0
13	16	4	8	0	11	0	13	24	0	11	0	5	0
14	19	0	10	4	8	0	14	20	8	11	0	7	0
15	14	6	13	20	15	14	15	23	8	11	0	9	8
16	15	4	16	16	14	0	16	23	16	11	0	5	0
17	10	4	15	0	10	8	17	12	2	11	0	5	0
18	16	4	14	24	15	16	18	7	0	29	36	5	0
19	8	0	14	0	11	0	19	11	0	14	0	9	4
20	40	39	8	0	15	0	20	7	0	23	12	7	0
	154	61	152	88	125	54		140	34	153	56	72	12
21	88	100	15	28	6	0	21	7	0	22	19	8	6
22	40	26	18	30	14	0	22	9	0	20	0	5	0
23	14	0	20	23	10	0	23	11	0	18	0	7	0
24	12	4	8	0	6	0	24	14	3	11	0	9	0
25	10	0	15	8	11	10	25	7	0	17	9	8	0
26	8	0	10	0	6	0	26	7	0	18	9	9	0
27	20	15	15	0	8	3	27	9	0	21	0	5	0
28	33	11	36	90	6	0	28	13	0	25	8	18	13
29	23	20	16	0	15	0	29	13	6	22	0		
30	11	0	12	0	20	4	30	15	10	11	0		
31			17	0			31	10	6	14	0		
	259	176	182	179	102	17		115	25	199	45	69	19

The purpose of the General Labor Record is to obtain in convenient form the data necessary to show how the labor done on the farm is distributed over the year. The graphs on the next page show the average number of hours' work per day by ten-day periods both for men and horses. Outside Labor and Exchange Labor are not included since the purpose of this record is to show the distribution required by the farm itself. The numbers are given to the nearest unit.



92. Steps in keeping a set of cost accounts. — We will now give in order the steps which must be taken in keeping a set of cost accounts. References are made to accounts and records in the set given on pages 141 to 164 and to the sections in which the various steps are explained in detail.

1. Take an inventory of all farm property. Complete directions are given in Part I.

2. Make a map of the farm (see section 52).

3. Make a list of the accounts to be kept (see sections 54, 81, 82). Include in the list Inventory, Interest, Supplies, Labor, and all accounts for which there may be items in the Inventory summary.

4. Arrange the accounts in alphabetical order and enter each head in the account book, using two opposite pages for each account. The charges are to be entered on the left page and the credits on the right. In the case of long accounts, such as Dairy Equipment, etc., four pages may be allowed for one account.

5. Credit Inventory with all items of property and charge it with all debts (see section 74 and page 147).

6. Charge each account with the inventory value of the property covered by it (see accounts on pages 141, 142, etc.).

7. Credit Bills Payable with all notes which the farmer has outstanding (see page 150).

8. Charge Bills Receivable with all notes which the farmer holds (see page 150).

9. Decide what Labor Records are to be kept (see sections 57, 88) and arrange these alphabetically in the Labor Record part of the account book. If the amount of labor to be charged to an account is small, one page may be sufficient. Otherwise allow two pages. There should be Labor Records with Hauling Manure and with Seasonal Work (see pages 31, 159, 160).

10. Estimate the daily chores for each animal group and enter in the Labor Records as shown in section 58 (see also pages 152, 156, 157).

11. Each day enter the record of the day's work into the proper Labor Records. For each Labor Record decide the different operations about which separate information is desired and enter the labor under these separate heads (see section 57 and pages 152, 153, etc.).

12. Decide what special records are to be kept (see sections 63, 64) and arrange for keeping these informally. For examples of such records see page 161.

13. When an article is purchased or any other farm expenditure is made, the amount is charged to the proper account, and, in case cash is paid and a Cash Account is kept, the same amount is credited to Cash. Thus, the shovel and the tester bought March 9 (see page 123) are charged to Equipment (see page 144) and the amount credited to Cash (the detailed Cash Account is not shown in the text). If the article is bought on credit; the amount is charged the same as if cash were paid but is credited to the person or concern from which the purchase is made. Thus, the purchase made April 14 (see page 125) is credited to the Farmer's Elevator (see page 150). If a note is given to cover a purchase price, Bills Payable is credited. Thus, the note given on March 27 (see page 124) for the purchase price of a sow is credited to Bills Payable (see page 150).

14. When an article is sold or an income is derived from the farm in any other way, the proper account is credited, and, in case cash is received and a Cash Account is kept, the same amount is charged to Cash. In case a sale is made on credit, the person or concern to whom the sale is made is charged (see the account with Walter James on page 150). If a note is received to cover the selling price, the Bills Receivable Account is charged (see page 150).

15. When taxes are paid, the tax bills show how much is levied on each class of property, except that the taxes on land and buildings are usually put under the one head Real Estate. The tax on real estate is divided between Land and Buildings in proportion to their inventory values and charged to these accounts. The taxes on other items of property are charged to the respective accounts (see section 86).

16. Enter the cost of seed for fall seeding and the cost of grass seed directly into the Seasonal Work Record (see page 160).

17. Charge the various animal groups with the value of the feed consumed. This charge may be made in one lump sum for each group in case Feed Records are kept or may be made from time to time as the feed is set aside (see section 63 and pages 142, 145, 146). The feed is credited in various ways, as described in section 68.

18. At the end of the year an inventory is taken and the totals credited to the various accounts to which corresponding charges were made at the beginning of the year. These amounts are now charged to the Inventory Account (see section 74).

19. At the end of the year, credit Inventory with all unpaid notes given to others and charge to Bills Payable (see page 150). Also credit Inventory with all debts due others but not covered by notes and charge Inventory with all such debts due the farmer. Charge Inventory with all notes given to the farmer by others and credit Bills Receivable (see page 150).

20. The value of the farmer's labor and of unpaid labor done by members of the family and the value of board of the farmer and unpaid laborers are charged to Labor (see section 65 and page 148) and credited to Personal (see section 72 and page 149). The cost of boarding hired help is also charged to Labor and credited to Personal. For items entering into the cost of board see section 44.

21. The number of hours labor to be charged to each account is found from the summaries in the Labor Records. These numbers are entered on the credit side of the Labor Account and the total number of hours found (see page 148). Note that no labor by men is charged to Labor (see section 65).

22. In the Work Horse Account and in the Equipment Account enter the number of hours to be charged to each of the other accounts.

23. Decide the order in which to close the accounts (see section 90).

24. If the Labor Account is to be closed first, estimate the cost per hour of horse-labor and equipment-use, find total cost of labor and the cost per hour (see section 65 and page 148). Charge cost of labor to each account, credit Labor, and close Labor Account.

25. If the Equipment Account is closed next, charge interest on inventory value, estimate charge for use of buildings, use estimate already made for cost per hour of horse-labor, find cost per hour of equipment-use, and close the account in the same manner as the Labor Account (see section 67 and page 144). Note that no charge for use of equipment is made to this account.

26. Charge interest to such accounts as Land, Buildings, Dairy, Work Horses, Hogs, Poultry, and accounts with crops according to the rules stated in section 89. In this connection note also section 104.

27. Find the net cost per year of buildings. This net cost is the total charges (inventory at the beginning of the year, repairs, labor, interest, taxes, insurance, etc.) less the credits already entered (inventory at the end of the year and estimated amounts credited for the use by horses and equipment). Find how many per cent this net cost is of the inventory value of Buildings at the beginning of the year (see page 141).

28. Charge Personal, Horses, Cattle, Equipment, Supplies, etc. with use of buildings on the value of that part of buildings used by each and credit to Buildings (see pages 141, 142, 144, etc.).

29. In the same manner as with the buildings find the cost of the use of land, credit Land, and charge the proper accounts (see pages 141, 142, 143, etc.).

30. Divide the total charged to General Farm among the following accounts in proportion to their magnitudes: all accounts with crops; all accounts with animals except Work Horses (see section 71). Credit General Farm and charge these accounts. In some cases where the total charged to General Farm is small the whole amount may be charged directly to Loss and Gain.

31. Close the various accounts and enter the balances as loss or gain into the Loss and Gain Account. The Personal and Inventory Accounts are not closed into the Loss and Gain Account.

32. The Inventory, Loss and Gain, and Personal Accounts are now closed as shown on pages 147, 149.

The gain shown in the Loss and Gain Account is the net gain from the farming business, while the gain shown in the Inventory Account is the farmer's gain in property during the year (provided cash on hand at the beginning and end of the year is included). The Loss and Gain Account on page 147 shows a net gain of \$1130.93, while the Inventory Account on the same page shows a gain of \$887.16. The difference of \$243.77 is precisely the amount required to balance the Personal Account on page 149.

This affords an excellent check on the accuracy of the book-keeping since it is not at all likely that two errors should be such as to balance each other exactly. On this point, see, however, section 106. It should be noted that this check is possible only in case a complete double-entry system is used (see section 105); that is, in case a Cash Account is kept.

93. Meaning of income. — In farm accounting the word *income*, in combination with other words, is used to mean several different things. We distinguish the following uses:

Farm income, or *total net farm income*, is used to include the net return from the farmer's labor and the total capital used in the farming operations. This income is found by adding to the balance of the Loss and Gain Account the charge made in the Labor Account for the farmer's labor and the total charges made in the Interest Account on account of interest paid out. The value of unpaid labor is not added. Income in this sense, which corresponds to item 12 on page 60, we will hereafter indicate by "farm income." The purpose of finding farm income as here defined may be shown by an example. Two farmers, A and B, are operating farms of the same size and of very nearly the same character. A pays \$600 interest on a \$10,000 farm mortgage and \$175 interest on other money borrowed for use in the farm business, while B has no indebtedness and pays no interest. This difference does not enter into their respective farm incomes. If they run their business with equal efficiency, their farm incomes will be equal. One of these men may secure considerable unpaid labor from his family, and the other none, but this will not affect their farm incomes, since the unpaid labor has been charged at its value to the various accounts. Hence the farm income of farmers operating farms of the same size and character is a measure of their efficiency as farmers.

Taxable farm income (see section 47) indicates the income which comes from the farmer's own labor, the unpaid labor of his family, and from the investment of his *own capital* in the business. Taxable income does not include the value of farm products used by the farmer's family nor the rental value of the farmhouse occupied by them. Hence the taxable income is obtained from the farm income by adding the value of unpaid labor, not including board, and subtracting

the interests actually paid on borrowed money and the value of the farm products used by the family. The difference between the interest on the total farm capital and the amount paid in interest on borrowed money is the interest on the farmer's own capital invested in the business.

STATEMENT OF INCOME

(1) Balance Loss and Gain Account	\$1130	93
(2) Farmer's labor (including board)	1140	00
(3) Interest paid out	456	08
(4) Farm income: sum of (1), (2), (3)	2727	01
(5) Unpaid labor (including board)	390	00
(6) (4) plus (5)	3117	01
(7) Interest paid	456	08
(8) Value of farm products used by family (including use of house)	810	18
(9) Taxable income: (6) less (7) and (8)	1850	75
(10) Interest on farmer's investment (balance of Interest Account)	1256	22
(11) Value of unpaid labor	390	00
(12) Labor income: (9) less (10) and (11)	204	53
(13) Value of living from farm (8)	810	18
(14) Labor earning of farmer: (12) plus (13)	1014	17

Labor income indicates the earnings of the farmer from his work alone less the value of farm products used by the family. This is found by subtracting from taxable income the interest on the farmer's net investment and the value of unpaid labor. The interest to be subtracted is the balance of the Interest Account.

Labor earning is used to indicate labor income plus the value of farm products used by the farmer's family. Labor earning is a true measure of what the farmer actually earns by his own work. Hence the success of two farmers may be compared by comparing their labor earnings.

These four uses of income are shown in compact form in the table above. Each meaning represents an important fact in the study of the farmer's economic status, and the student of farm management should be perfectly familiar with them.

94. General analysis of the accounts. — The chief purpose of farm accounting is to obtain information which will be valuable in the management of the farm, and the accounts are of little value unless a careful study is made of them for this purpose. We now proceed to study the set of accounts given on pages 141-164. We first note the gains and losses shown in the Loss and Gain Account. The (small) balances shown for Labor, Horses, Equipment, Land, and Buildings are due to the approximate value per unit put on them and are of no consequence. Gains are shown for Poultry, Hill Corn, Garden, Potatoes, Interest, Oats, and Alfalfa; while losses are shown for Drill Corn, General Farm, Cattle, Hogs, Supplies, and Hay. The General Farm Account must necessarily show a loss when, as is the case in the set shown in this book, the charges to this account are not distributed among other accounts, but the other losses and gains should be studied.

The loss on Supplies is accounted for by the rapid fall of prices on farm products during the year from March 1, 1920, to March 1, 1921, and the consequent low inventory value of material on hand at the second inventory. This cannot be verified from the accounts and records shown, since the detailed inventory is not given.

Hogs show a loss, and this may also be accounted for by falling prices. In May, 1920, ten hogs were sold at about $13\frac{1}{2}\text{¢}$ per pound live weight, while in February, 1921, 47 hogs were sold at about $7\frac{1}{2}\text{¢}$ per pound live weight. The 35 pigs on hand at the end of the year were inventoried at 7¢ per pound, while the 10 pigs on hand at the beginning of the year were inventoried at 13¢ per pound. The expensive feeds used for hogs made it impossible to raise them at a profit at such prices. If the corn fed to the hogs had been valued at 65¢ a bushel (farm value), as was the case at the end of the year (see account with Hill Corn, page 142), the account with Hogs would

have shown a gain. If, on the other hand, the second drove of hogs had been sold at the same price as the first, the account would have shown a gain of \$74 instead of a loss of \$72, and if hogs had been inventoried at 13¢ at the end of the year, the gain would have been \$240 still greater.

The crop of Drill Corn was light (an estimated equivalent of 35 bushels per acre), and this alone would be sufficient to explain the loss. A yield of 55 bushels per acre would have shown a slight gain.

The loss on Cattle is not so easily explained. The cows were inventoried at the same value per head at the beginning and the end of the year. On the whole, the feed for cattle was not valued very high; silage was valued lower than the rate at which it was charged to Supplies, which was based on 65¢ farm value for corn. The principal sales of cattle were made in March, 1920, when the market value was still high. The number of hours man-labor is high, and the possibility of reducing it should be investigated. A reduction of one fourth in man-labor would wipe out the loss. The data given in this set of accounts are not sufficient to indicate whether cows were of a grade to make successful dairying possible.

The low farm value put on hay (\$8 per ton) and the high charge for the use of land (\$12.75 per acre) produced a loss of \$26.75 on Hay though the crop was fairly good. A reduction of \$3 per acre for the use of land would produce a slight gain on Hay.

Poultry, Hill Corn, Oats, and Alfalfa show small but satisfactory gains. Hill Corn makes a particularly good showing in view of the high cost of labor and land and the low farm value (65¢ per bushel) put on corn. The question should be raised as to whether there was residual manure in this field for which no charge has been made. Suppose that in the preceding year manure valued at \$300 had been hauled on this field (compare Drill Corn in Field J). Thirty per cent of

this amount, or \$90, would then be charged against this year's crop, which would wipe out the gain and show a loss. If books had been kept on this farm for some years past, facts of this kind would be at hand. This is one of the many instances which show the increasing usefulness of farm accounting when continued over a number of years.

Poultry and Potatoes yielded satisfactory profits in the face of adverse conditions (high costs and low values of products, especially in the case of potatoes), and the farmer should consider the advisability of extending the production of these. How would doubling the number of hens affect the cost of feed, care, use of buildings, and marketing? It is possible that the poultry were fed largely from by-products for which little charge was made and which would otherwise go to waste and that doubling the size of the flock would much more than double the charge for feed. The answer to this question can come only from a more intimate acquaintance with the conditions of the farm than can be gained from the account books alone.

Garden showed the greatest profit, and the possibility and advisability of extending it should be considered with care. Were the conditions this year exceptional? Is there suitable land available for a larger garden? How expensive would it be to convert this land into a producing garden? Is there difficulty in obtaining additional labor at the time the garden products are picked and marketed? Is there market for a large crop? Would increasing the crop make the cost of marketing greater in proportion? These and possibly other questions should be considered.

The General Farm Account in this set is closed directly into the Loss and Gain Account rather than distributed among the productive accounts (see section 71). If this expense were divided, as suggested in section 71, Drill Corn, Cattle, Hogs, and Hay would show losses increased by approximately

\$3, \$56, \$43, and \$7, respectively, while the gain on Poultry, Hill Corn, Garden, Potatoes, Oats, and Alfalfa would be decreased by approximately \$6, \$16, \$6, \$2, \$12, and \$2, respectively.

While the accounts show a net gain of \$1130.93, this is \$134.29 less than the gain shown in the Interest Account. This means that if the farmer had invested the money tied up in the farm at 6% and worked throughout the year at a monthly wage of \$95 while boarding at home, and if other members of his family had earned \$390, the total income would have been \$134.29 greater than it really was. It must not be concluded, however, that it would be more advantageous for the farmer to sell his farm and work as a hired man. The farm affords continuous employment and a permanent residence, which one who works for wages seldom has. It also affords employment for other members of the family at odd times, which might be difficult to secure if the man were a wage worker. The farm products used in the household are charged at farm values, which in many cases are very much below the prices paid by those who buy them at the store. Milk valued at six cents per quart or even less on the farm is frequently sold at from twelve to fifteen cents in the city. Vegetables which in the city would cost a considerable amount are taken from the garden without any charge (as was done in this case). Finally, in most sections of the country the general value of land is gradually increasing, and no account is taken of such increase in the general farm accounts.

The graphs on page 164 are derived from the General Labor Record on pages 162, 163, and show the distribution of man-labor and horse-labor on the whole farm by 10-day periods. The average amount of man-labor per day is slightly over sixteen hours, including all the days of the year. Considering the small amount of hired labor, this is a large number of hours work done by the farmer and his son, who works only

at such times as his school attendance leaves him free. The distribution of man-labor over the year is very satisfactory. It is rather high in May, June, and July, averaging about 23 hours, 26 hours, and 20 hours per day, respectively. The lowest months are in order: February, November, December, averaging about 10 hours, 12 hours, and 12 hours per day, respectively.

There are a few 10-day periods with abnormally high averages. The last 10-day period in May averaged 27 hours per day. This was due to general pressure of spring work together with much hauling of manure. Three eighths of all the manure hauled during the year was hauled during these ten days. There was also considerable plowing. The farmer should consider the possibility of hauling some or all of the manure at a less pressing period. Might not some of it have been hauled during the first ten days of May when the average number of hours work per day was only eighteen? Could some of the plowing be done in the fall, say the first ten days of October, when man-labor was less than fourteen hours per day? The last 10-day period in June is the highest of the year. The excess of labor in this period consists largely of picking berries, which to a large extent was done by specially hired labor. There was also considerable work cultivating corn. There would seem to be no way of avoiding the high peak of man-labor at this time unless the type of farming were radically changed, and it might not be of any serious importance to do so if it were possible. The picking of berries by specially hired labor may be the best and cheapest way of harvesting this crop. In the second period in July man-labor averaged twenty-five hours a day. During this period working in the garden averaged four hours per day. The rest of the work was mainly haying and cultivating corn. There was also about ten hours work repairing machinery, which apparently might have been done at a less busy time.

Even one hour a day is of some importance in a busy period like this. The average of 26 hours per day in the third period of September was due to 136 hours work on silage, an operation which could not be distributed over other periods of time. The work on silage was done in three days, no doubt largely by specially hired labor. This labor peak would seem to require no further attention.

By turning to the Outside Labor Record, we find outside man-labor as follows: 1st period in March, 1 hr.; 2d period in March, 4 hr.; 3d period in April, 15½ hr.; 3d period in May, 9 hr.; 3d period in July, 14 hr.; 1st period in August, 10 hr.; 2d period in August, 47 hr.; 3d period in August, 33 hr.; 1st period in September, 17 hr.; 2d period in September, 4 hr.; 3d period in September, 17 hr.; 1st period in October, 14 hr.; 2d period in October, 30½ hr.; 3d period in October, 15½ hr.; 1st period in November, 4 hr.; 2d period in November, 11 hr.; 3d period in November, 14 hr.; 1st period in December, 19½ hr.; 3d period in December, 1 hr.; 1st period in January, 1 hr.; 2d period in January, 25 hr.; 3d period in January, 3 hr. From this it is seen that, in the main, outside labor was done when work on the farm was light. The apparent exception in the third period in September is unimportant, since the excess farm labor for that period was crowded into three days (work on silage), and the rest of the period was comparatively free. On the whole including outside labor would improve the General Labor Record.

The distribution of horse-labor for the year is highly unsatisfactory, ranging as it does from an average of less than 3 hours per day in April to about 26 hours per day in May. In the first 10-day period in September and the second period in February, horse-labor averaged about 1 hour per day, while in the third period in May it averaged about 38 hours per day. On only 9 days did horses work more than 40 hours per day. One of these was February 9, when hogs were hauled to

town, and another was September 21, when the silo was filled. For both of these, neighbors' teams were, of course, brought in. All other days when horses worked more than forty hours (four horses working ten hours each) occur in the latter part of May when plowing and hauling manure were permitted to pile up the work (see discussion on page 176 on labor in the third period of May). Hence it is apparent that with the exercise of a little care four horses are entirely sufficient to do the work on this farm. This was indeed the number of grown horses kept after the sale of three horses in March.

Each horse worked an average of 2.3 hours a day, counting 300 working days a year. (There was very little horse work done on Sundays and other holidays.) The problem of so arranging the farming operations as to employ horses more fully is a very difficult one. It is clear that the total cost of keeping horses would not be increased anywhere nearly in proportion if the average number of hours work done by each horse were greatly increased, and that, therefore, more complete use of the horses would decrease the cost per hour of horse-labor. This, however, is a problem which is very difficult of solution or even approximate solution.

To make an exhaustive study of labor distribution, it would be necessary to make a separate record, or graph, like those shown on pages 162-164 for each of the main enterprises. This would show which enterprises tend to pile up an excessive amount of labor at the same time and thus produce excessively high peaks. Such peaks are not serious in the case of man-labor if hired hands can readily be picked up for a few days; otherwise they are, of course, serious. They are practically always serious, however, in the case of horse-labor. At the time such peaks occur it is practically impossible to hire a team, and it may be necessary to keep an extra team the whole year, because a large amount of horse-labor comes in a few 10-day periods. To avoid this is usually very difficult and

might require the entire abandonment of a certain crop, a procedure which for several reasons would be very likely to entail serious loss.

95. Detailed analysis of accounts. — Even if an enterprise, such as dairy or oats, shows a loss from year to year, it does not follow that it should be abandoned. It may be that the dairy makes possible more complete employment of labor, so as to reduce the labor costs to all enterprises, and thus really increases the net income from the farm though the Dairy Account shows a loss. It may be that oats is a valuable element in a crop rotation and that in the long run it is profitable though a loss is shown in the Oats Account. Indeed the chief purpose of cost accounts is not to find the gain or loss from each enterprise but to furnish information about the various factors of receipts and expenditures in each enterprise, which will make possible more intelligent planning.

We now proceed to study each account more in detail.

ANALYSIS OF HILL CORN ACCOUNT

	OUR FARM		OTHER FARMS	
	Hours	Cost	Hours	Cost
Number of acres (19.35)				
Use of land per acre		\$12 75		
Cost of seed per acre		62		
Man-labor per acre	15.70	4 28		
Horse-labor per acre	35 00	8 35		
Equipment-use per acre	35 00	3 24		
Total labor cost per acre		15 87		
Other costs per acre (Interest)		31		
Total cost per acre		29 55		
Yield per acre (50.65 bu.)				
Cost per unit		58		
Value of yield per acre		32 92		
Profit per acre		3 37		
Profit per hour man-labor		215		
Land cost is what per cent of total cost	43%			
Labor cost is what per cent of total cost	54%			
Other costs are what per cent of the total cost	3%			

By writing to the nearest agricultural college, data may be obtained showing the average costs of raising corn on many farms in the same general region as the farm we are studying. By entering these averages in the column headed "Other Farms," our farm may be compared with them and thus the elements of weakness and strength in our case be revealed. The costs consist mainly of land and labor. The cost of the use of land is entirely beyond the farmer's control and is always about the same for all farms of similar character in the same locality (see section 70). Hence it remains to consider labor costs. As we have seen before (page 178 ff.), the cost per hour of labor, and especially of horse-labor, depends largely upon its distribution over the different periods of the year. Suppose, for instance, that by full employment of horses the cost per hour of horse-labor were brought down to 12¢ instead of nearly 24¢ as in the present case. This would decrease the cost per acre of raising corn by more than \$4 and would increase the net gain by the same amount. Proper care of machinery might reduce the cost of equipment-use by 2¢ or 3¢ per hour, which would increase the profits from corn by \$1 per acre. These considerations in regard to labor apply equally to all farm operations involving labor.

Certain other considerations in regard to labor apply only to the particular enterprise of raising corn: Is it possible to achieve the same results with a smaller number of hours labor by men and horses? In each of the operations of disking, dragging, planting, cultivating, and picking was the average amount of work done per hour up to the normal standard, and, if not, why not? Was time lost because of the small size of the field? Were men and horses normally efficient? Did irregular shape of fields interfere with expeditious operations? What can be done to reduce the number of hours per acre required for any of the operations?

These questions all relate to the possibility of decreasing

the cost per acre. On the other hand, is it possible to increase the yield so as to increase the profit? Will an extra application of fertilizer more than pay for itself? By turning to the Manure Record we find that one load of manure in the field costs about \$2.25. Of this 40%, or 90¢, is used the first year. Will one load of manure increase the yield by two bushels? If so, the farmer will make a net profit by applying manure. Is the field used for corn adapted to this crop? Might the yield be increased by different rotations of crops or by summer fallow? Is the system of cultivation used such as to produce the best possible crop? These and other questions are pertinent.

A study similar to the one just made for Hill Corn should be made for all field crops.

ANALYSIS OF THE GARDEN ACCOUNT (STRAWBERRIES)

	OUR FARM		OTHER FARMS	
	Hours	Cost	Hours	Cost
Area in berries (2.62 acres—92% of total)				
Use of land per acre		\$12 75		
Man-labor per acre	159			
Horse-labor per acre	9.5			
Cost man-labor per acre		43 26		
Cost horse-labor and equipment-use per acre		3 14		
Cost of marketing per acre		4 82		
Other costs per acre (boxes)		7 11		
Total cost per acre		71 08		
Yield per acre (737 qt.)				
Value of yield per acre		234 29		
Gain per acre		163 21		
Gain per hour of labor		1 03		
Labor and marketing is what per cent of cost		72%		
Land is what per cent of total		18%		
Other costs are what per cent of total		10%		

Since the sale of berries equals about 92% of the total sales from garden, the account is analyzed as an account with berries. Land used for berries and labor costs (including marketing) are taken as 92% of the total.

ANALYSIS OF HOG ACCOUNT

	OUR FARM	OTHER FARMS
Inventory end of year (except breeding animals)	52 cwt.	
Sold during the year	186 cwt.	
Total	238 cwt.	
Inventory beginning of year (except breeding animals)	15 cwt.	
Produced during year	223 cwt.	
Total cost of feed	1258 83	
Total cost of labor	217 87	
Other cost (except purchases and cost of shipping)	114 95	
Cost of feed per cwt.	5 64	
Cost of labor per cwt.	98	
Other costs per cwt.	52	
Total cost per cwt.	7 14	
Feed is what per cent of total cost	79%	
Labor is what per cent of total cost	14%	
Other costs are what per cent of total	7%	

In making out this statement the six small pigs sold are regarded as equivalent to one sow though the prices are very different. The six pigs sold for \$21, which is the inventory value of 300 lb. live hogs, and this is assumed as at least equal to the weight of the sow.

The composition of the feed and the actual amounts fed may be studied from the Feed Records (see pages 89, 90, 122). This should be compared with amounts fed on other farms. The nearest agricultural college will furnish the information on request.

In case a separate account is kept with Beef Cattle, an analysis closely similar to the above may be made of it. An account with a dual-purpose herd, such as the one on page 142, does not contain information about the cost of raising beef or of producing milk (see section 97). The sale of live animals and the value of the dairy products are about the same, and neither of the plans proposed in section 97 is feasible. Hence a detailed analysis such as is given above for hogs is not possible. A similar remark applies to the Poultry Account.

PART IV

SPECIAL PROBLEMS AND SPECIAL RECORDS

96. Account with double crops. — The problem of determining the cost of producing double crops, such as peas and apples in an apple orchard, has caused much discussion. There are several possibilities: The simplest procedure is to keep one account with the composite crop, peas-apples. This would cause no serious difficulty beyond that inherent in the Orchard Account itself (see section 98). Another method is to regard the apples as the main crop and the peas as a by-product, charging apples with all costs of apples and peas and crediting apples with receipts from both apples and peas.

When the attempt is made to keep separate accounts with both peas and apples, difficulties arise. How much should the peas pay for the use of the land? Some argue that they should pay nothing, since the land is already set aside for the use of apples, and hence a payment for its use by the incidental pea crop would be a subsidy to the apples, which would improperly reduce their cost of production. On the other hand, the partisans of cheap apples argue that the peas should pay regular rent for the land they occupy. They say it is to the credit of apples that they do not require the complete use of the orchard land and that they should not be compelled to bear the result of the bad management that would allow the orchard land to go partly unused.

The real solution of the difficulty may be found in the answer to the question as to the information which the farmer wishes to obtain from his books. Does the farmer want to know whether or not he should plant peas in the apple orchard? If so, he must keep a separate account with peas, charging nothing for the use of the land but taking proper account of

any possible increase in the cost of running the orchard and taking account also of any possible decrease in the yield of apples. Does the farmer wish to determine the cost of raising apples? If so, he must make the peas pay a reasonable amount for the use of the land, taking into consideration the inconvenience of producing peas in an orchard as compared with an open field. The charge for land made to the peas should be just enough so that the cost of production of peas in the orchard and in an open field would be the same. This is the method which should be used generally.

97. Account with mixed beef and dairy herd. — In a purely dairy herd, veal calves are produced as a by-product and their selling prices credited to the herd. Whenever the veal calf is worth more than its feed and care, it is impossible to answer the question as to whether money is made by producing veal, since it is impossible to tell how much it costs to produce the new-born calf. Similarly in a beef herd, some milk may be produced as a by-product and credited to the beef enterprise. These cases are simple enough from the accounting point of view. One is regarded as a beef cattle enterprise, and the other as a dairy cattle enterprise, and all receipts are credited to their respective accounts.

In the case of a herd of so-called dual-purpose cattle, the problems involved are closely similar to those discussed in section 96 under accounts with double crops. The cows give a good deal of milk, and the dairy brings a substantial income, and at the same time stock is fed to maturity and sold for good prices as beef animals. It is easy enough to determine whether the herd as a whole shows a loss or gain, and this after all is the really important problem. A farmer wants to know whether he shall keep a beef herd, a dairy herd, or a dual-purpose herd. The question can be answered by comparing the returns, under conditions similar to his, from the three different kinds of herds.

One may attempt to find how much it costs to produce milk from a dual-purpose herd by assuming that the cost of the beef produced is the same as in a beef herd, or one may attempt to find the cost of producing beef from such a herd by assuming that the cost of the milk produced is the same as in a dairy herd. But the difficulty is that the sum of the two costs thus determined will be in general quite different from the total cost of keeping the herd.

98. Account with an orchard. — The special difficulty in keeping account with an orchard arises from the fact that the value of the orchard at any one time is the result of many investments made at different times. The first apple may be picked six or eight years after the first expense is incurred in preparing the land and setting out the trees. During this time the land has been occupied by the orchard, and pay for its use must be charged. If an incidental crop such as peas is raised, this should be treated as in section 96.

The procedure from year to year should be as follows :

1. The year of starting the orchard charge the Orchard Account with all costs.
2. Carry the orchard in the inventory at cost (including interest) and charge this amount to the next year's Orchard Account.
3. In the second year's account charge all additional costs including interest on inventory value at the end of the first year and including use of land for the second year.
4. Carry orchard in the second inventory at total cost, as indicated by the second year's Orchard Account.
5. Continue in this manner until the orchard reaches normal producing capacity.
6. When the trees have reached normal bearing capacity, no further increases should be made in inventory values. Expenses should be deducted from receipts in the usual manner, and gains treated as in other accounts.

7. Whenever it becomes apparent that the orchard is decreasing in producing capacity, depreciation should be charged, and this should continue until the value is again brought down to that of the land without trees.

8. The gains should be carried forward informally from year to year. The question at issue is not only whether the orchard pays in any particular year, but whether the orchard as a whole (an enterprise extending over thirty years or more) pays. The receipts during the years of maximum yield must not only pay all costs for these years, including interest on a large investment, but they must also contribute to the repayment of this investment. The real fact is that depreciation begins before the end of the period of maximum bearing capacity and that hence the inventory taken as suggested above does not represent the true state of affairs. However, the method proposed here for taking the inventory seems to be the most practical. Any other method is almost certain to involve difficulties far beyond the scope of this book.

99. Share renter. — Usually the share renter does all the farm work and contributes all or part of the machinery, horses, seed, etc. His accounts ordinarily are concerned only with his share of the business. The share which goes to the owner of the farm covers interest on all property contributed by him, depreciation and repairs on all farm improvements, depreciation of machinery and animals belonging to the owner of the farm, taxes, and insurance. Hence the tenant farmer takes no account of these items. In his books there will be no charges for use of land or buildings, taxes, or farm improvements, and he will not charge any enterprise with these items. In other respects, his accounts will be the same as those we have studied heretofore. The tenant farmer will therefore charge to each account all expenses which *he* incurs in the enterprise covered by the account and will credit the account with all receipts which *he* obtains from the enterprise.

Thus, in case some of the horses belong to the owner of the farm, the Horse Account will be charged and credited only with the inventory values of the horses owned by the tenant, and interest will be charged only on the value of these horses. This will operate to reduce the cost per horse-hour. In all other respects, the Horse Account will be kept exactly as is done by the farmer operating his own farm.

A field enterprise is charged with all cost to the tenant and credited with his share of the products. This plan throws the rental of the farm and other items enumerated above on the productive enterprises.

100. Cash renter. — The cash renter should keep his books exactly as the share renter does except that he should apportion the cash rent among the accounts with productive enterprises (all accounts with field crops and accounts with farm animals except work horses) in proportion to their magnitude (see section 71). This plan is open to objections, which would be important in very large enterprises extending over a long period of time, but for the purpose of the ordinary farm it is entirely adequate.

101. Share-cash renter. — The share-cash renter pays his rent partly in cash and partly in a share of the products. This arrangement introduces very little additional difficulty into the accounting. The cash rent is charged to the accounts with the productive enterprises in the manner described in section 100, and the accounts are then kept exactly like those of the straight share renter (see section 99).

102. Account with marketing. — In the accounts described thus far, products not sold nor used as soon as their production is completed are carried in the Supplies Account until finally disposed of. There are reasons why some farmers may prefer to charge all products intended for sale to a separate account with Marketing, while products intended for use on the farm will continue to be charged to the Supplies Account.

The problem of marketing farm products is very complicated, and even a brief description of it would be entirely out of place here. Indeed this problem promises to become increasingly complicated in the near future. If a separate account is kept with Marketing, all products intended for sale are charged to it at their farm value instead of to the Supplies Account (see section 68). Cost of storage and all costs of taking the products to the market and selling them are also charged to this account. Cost of marketing includes all expenses incurred in finding the best market, whether this work is done by the farmer individually or by marketing associations to which he belongs, cost of packing, hauling, freight, express, etc. The account is credited with the proceeds of all sales.

A farmer who produces large quantities of a single product, such as dairy products, fruit, vegetables, eggs, etc., may find it convenient to keep a separate account with the marketing of such product. This will enable him to decide whether he is losing or gaining by an elaborate system of marketing as compared with selling at the nearest market at current prices.

As has been stated before (see sections 54, 81) no absolute rules can be laid down as to just what accounts a farmer should keep. The particular information which a farmer wishes to obtain from his books will decide whether he will carry all farm products in the Supplies Account or whether he will keep one or more additional accounts with Marketing. In some cases it might be advisable to keep an account with the marketing of a single commodity such as eggs and to carry all other products intended for sale in the Supplies Account.

103. Meaning of cost. — The word *cost* is used with many different meanings. When complete cost accounts are kept, it includes rent of land, all costs of equipment used, interest on all investments, cost of hired labor, together with normal farm-labor pay for the farmer's own work and for

work done by the members of his own family. Hence an account which shows neither loss nor gain indicates that the farmer has received normal interest on his investment and ordinary pay for his labor and no more. The farmer has found safe investment for his capital and reasonably remunerative work for himself and possibly for some members of his family.

When cost accounts are not kept, the word *cost* is almost certain not to include some items which turn up as costs in cost accounting. Sometimes only the cost of hired labor is included. Frequently such items as cost of machinery and even a rental value of the land may not be included.

Some farmers have insisted that since crops take a certain amount of fertility out of the soil, the elements of fertility thus removed should be charged against the crops at their market value — so much for fixed nitrogen, so much for phosphates, etc. It must be taken into account, however, that by proper farming the fertility of the soil may be maintained indefinitely or even increased. Hence, charges for manure and other fertilizer, as well as for summer fallow, would seem all that is justified in this direction.

When comparing costs of producing the same product on different farms, it is essential that the same *cost* is used. One farmer may report considerable gain on an enterprise, and another, a loss, when, as a matter of fact, the conditions are really the reverse.

It is often urged that the price of farm products should be sufficient to cover cost of production. This raises many questions of economics that are beyond the scope of this book.

104. Investments on which interest should be charged. — We will now consider in some detail the reasons for the rules stated in section 89. There is by no means complete agreement among farm accountants as to the items to be included among the investments on which interest should be charged.

It is agreed that interest should be charged on the value of the farm including buildings and other farm improvements, on cash on hand, on the value of equipment and the more permanent farm animals such as draft animals and dairy stock. It is also fairly generally agreed that interest should be charged on beef cattle and poultry on hand at the beginning of the year and on hogs used for breeding.

There are other items in regard to which there is decided difference of opinion: The complete operation of raising and selling hogs is carried out entirely within the year for which the books are kept. Should interest be charged on these hogs? Corn is put in the crib in the fall and used six months later. Should interest be charged on the corn for this period? Labor is done in the spring on crops harvested in the fall or in the fall on crops harvested the following year. Should interest be charged on the cost of this labor? These are questions which have led to protracted and inconclusive debates.

The following facts would seem to lead to definite answers to these questions: The wages of hired labor are payable, not at the end of the season when the crops are harvested but at short intervals, monthly or oftener. This applies to hired teams and equipment as well as to man-labor. The farmer charges his own labor to the Labor Account at a rate comparable to the cost of hired labor, and hence this charge is made on the assumption that the wages are to be paid monthly. If the charge were made on the assumption that wages are to be paid at the end of the year or when the products of the labor are sold, the charge would be higher for the same reason that the wages of a hired laborer would be higher if he were to be paid in a lump sum at the end of the year than if paid promptly at the end of each month. It follows that the pay for any man-labor done on the farm is to be regarded as due at least as early as the end of the month in which it is done, and that if

the income from the farm enterprise on which the work is done comes later than that, interest should be charged.

The question as to whether interest should be charged on the cost of horse-labor and equipment-use presents additional difficulties: It is urged that interest has already been charged on the value of horses and equipment, and therefore no interest should be charged on the value of work done by these even though the real pay comes as late as the end of the year. To do so, it is said, would be charging interest on interest, which is not permitted. In this connection the following remarks would seem pertinent:

(a) The total charged to Work Horses is by no means confined to the inventory value on which interest is charged. The Horse Account on page 146 shows interest charged on an average inventory value of \$450, while the total charged to this account, other than inventory, equipment-use, use of buildings, and interest, is \$764.34. Assuming that these costs were distributed uniformly over the year, we should leave \$382.17 invested for a whole year, on which no interest would be charged. If no interest were charged on the cost of horse-labor, we should certainly be in error in entirely omitting from our accounts interest on this amount. That is, admitting, for the sake of the argument, the validity of the objection stated above, we should be about as far wrong one way as the other.

(b) The farmer is interested in the comparative profitability of his various farm enterprises. The length of time which he must wait from the time he does his work until he reaps his reward enters here as a real element. If work is done on hay, the result is obtained in a few days, or, at most, weeks. If the hay is charged to Supplies, it is agreed by all that interest should be charged, and, if it is sold, the money will be in hand ready to earn interest. It may, for instance, be used to redeem a note in the bank and thus save payment of interest.

If, on the other hand, fall work is done on winter wheat, the real pay will not be forthcoming in less than a year, and the note will remain in the bank drawing interest. To take account of such facts it is necessary to charge wheat with the total cost of all work from the time it is done until the wheat is threshed.

(c) The farmer is interested in knowing whether it is more profitable to use his teams and equipment on his own farm or to hire them out at current rates. There are few questions discussed more keenly in farmers' meetings than this one: Does the farmer receive as high compensation for his work and the use of his capital as do people in other industries? To make this comparison he must keep his books according to the same principle as the man who engages in the competing (competing for labor and for the service of teams and equipment) occupations. Now a man who does teaming for others charges interest on the value of his teams and equipment for the purpose of determining the cost of the service he renders, but, nevertheless, he expects his pay at least monthly, and, if by special agreement he is to wait for his pay until the end of the year, he would want an additional amount on account of delay in receiving payment. That is, he would charge interest on the value of horses and equipment and also on the deferred payment for work done by them. For these reasons it would seem best to charge interest on the cost of horse-labor and equipment-use in the same manner that interest is charged on the cost of man-labor.

The cost of work done on draft animals, dairy, or poultry, from which more or less continuous incomes are realized, should not carry interest, because the pay for such work is obtained in a period short enough to be comparable to that in which hired labor is paid. Interest should be charged on the cost of work and other investments in all crops and in all animals produced for sale. In some cases, such as poultry and mixed

beef and dairy herds (where one account is kept with each), the part of labor and feed (see below) on which interest is to be charged must be estimated.

The question as to whether interest should be charged on feeds and supplies can now be determined quite easily. An example will illustrate: A farmer may sell his corn at the time it is harvested, he may keep it and sell it late in the winter, or he may keep it and use it during the winter and the following summer. Let us consider the alternatives of selling in November and May. Clearly it will not pay to keep the corn unless the price in May is sufficiently higher than in November to cover shrinkage, storage, and interest on the November price for six months, and we may assume that in the long run this will be so. A farmer who is in the habit of selling corn in the spring instead of in the fall will find that in some years he makes a net gain (over and above the items just enumerated), while in other years he sustains a net loss by so doing. The point here is that such gain or loss can only be determined after interest has been deducted. Precisely similar considerations apply when the corn is fed on the farm. It will be charged to the animals at its farm value at the time it is set aside for them, and in the long run this will be sufficient to cover interest besides the other charges. It follows therefore that interest should be charged to Supplies on the average inventory. The gain or loss in the Supplies Account will then depend on whether prices are rising or falling as compared with normal price variations. Interest should be charged to animal accounts on the value of feeds from the time they are set aside, except in the cases of draft animals, dairy herds, and poultry, exactly according to the same principle as the charge of interest on labor costs. An additional question, which is not considered here, namely, whether interest should be charged on feeds after setting them aside, arises when feeds for horses or dairy cattle are set aside long before they are used.

Seasonal work of a certain type presents peculiar difficulties. Such work as fall plowing and seeding, the complete return for which is obtained the following harvest, presents no difficulty. Interest is charged in the usual manner at the time the accounts are closed. The problem of charging interest on manure, grass seeding, and summer fallow, the returns for which are spread over a series of years, involves more complicated principles. For practical purposes it will be sufficient to charge interest on the value of manure, summer fallow, etc. used each year.

Interest should not be charged on the cost of use of land or buildings, nor should interest be charged on the interest charge itself. This follows from the fact that common interest and rent are payable at the end and not at the beginning of the year.

105. Double-entry bookkeeping. — In case a Cash Account (see section 77) is kept, every item entered into an account is entered into two different accounts, once on the credit side and once on the charge side. For this reason such accounting is called double-entry bookkeeping. The double entry is maintained even in the course of closing the books. Thus, when an enterprise is charged with a certain amount for the use of land, Land is credited with the same amount; when an enterprise is charged with a certain amount for labor, Labor is credited with the same amount. Finally when an account is closed by entering a certain gain or loss, the same amount is entered on the opposite side in the Loss and Gain Account. It follows, therefore, that at every stage in the accounting, the sum of all credits is equal to the sum of all charges. It also follows obviously that the sum of all the *credit balances* must equal the sum of all the *charge balances*. When an account has been closed, it has no balance remaining, and hence only such accounts as have not been closed need to be considered. After the set given on pages 141-150 has been closed,

the only accounts which have not been closed into other accounts are Inventory, Personal, and Loss and Gain. Of these, Loss and Gain shows a charge balance of \$1130.93, while Inventory and Personal show credit balances of \$887.16 and \$243.77 respectively, and these together equal the Loss and Gain charge balance.

106. Trial balance. — In ordinary accounting it is customary to check work from time to time by taking what is called a trial balance. This consists in finding the sum of all the credits and of all the charges. If these are equal, the accounts are said to balance. If a set of accounts fails to balance, we are certain that some error has been made. It may be that an item has been entered once only when it should have been entered twice; an item may have been entered twice on the credit side or twice on the charge side when it should have been entered once on each side; an error may have been made by entering an item incorrectly on one side.

On the other hand, it is not at all certain that the accounts have been kept correctly even if they do balance. Items may have been omitted entirely; they may have been entered into the wrong accounts; the same incorrect figure may have been entered on both sides. However, the great majority of errors in accounting work is detected by the trial balance, though obviously it cannot detect erroneous principles. The balance noted in section 105 for the three unclosed accounts in the set on pages 141-150 forms an effective check for that whole set of accounts with the exceptions just noted.

In practical commercial accounting trial balances are taken quite frequently, say once each month. In the set given here these were actually taken but were omitted in the book for the sake of saving space. The chief value of monthly trial balances consists in locating possible errors within a small part of the accounts and thus rendering their detection much easier. Without the use of trial balances it might be neces-

sary to go over the whole year's accounts to detect a single error.

107. Milk record. — We now proceed to study certain records which, while not necessary for ordinary cost accounting, are of great importance in developing more profitable farming. In any herd of cows that have not been selected especially with reference to the amount of milk they give it will be found that some cows produce very much more milk than others. This will be true even if all the cows are ordinary scrubs or all pure bred and of the same breed. In a large herd the best cow will be found to produce more than twice as much as the poorest. Evidently, the thing to do is to dispose of the poorer cows and replace them with better ones. While the comparative amounts of milk that two cows will give can be judged fairly well by an expert who merely looks them over, the best method is to measure the milk.

Aside from the general fact that certain breeds of cows produce milk of a higher quality than others, very little can be learned about the quality of the milk by simply observing the animals. One of two cows of apparently the same qualities may produce milk containing 3.5% butter fat and the other 4.5% butter fat.

Hence it is necessary to keep a record showing the amount and quality of milk given by each cow. The most convenient method for measuring milk is to weigh it. Arrangements can be made so that this work, including the recording, need not consume one minute of time per cow. It is sufficient to weigh the milk one day each week.

Testing the milk for butter fat requires the use of a Babcock tester, and the work is not difficult. If there is a creamery in the neighborhood, samples may be tested there from time to time. The quality of the milk from the same cow does not change much from time to time and is influenced very little by feeding. The milk grows slightly richer in

butter fat as the lactation period progresses. A cow that is fat when coming in gives a little richer milk for a short time.

108. Method of keeping milk record. — Nail Barn Milk Record blank (see below) on a board. Read off weight of milk to the nearest tenth of a pound and enter result on record. To transfer to the permanent milk record add morning and evening production and multiply by 7. For March 2 in Milk and Butter Fat Record shown below multiply by 2 instead of by 7, since the amount for two days only is wanted. In the “% Fat” column write the rate obtained by the test nearest in point of time. The best procedure is to write in results of a test at the proper points when it is actually made, leaving all succeeding spaces blank until the next test is made.

BARN MILK RECORD

WEEK ENDING		MAUDE	SADIE	LUCIE	SPOT	KATE
Mar. 2 1922	Mng.	17.4	12.9	21.2	8.4	(2 da.)
	Evng.	16.2	11.4	19.7	7.6	
Mar. 9	Mng.	16.8	12.8	22.7	8.2	Fresh
	Evng.	15.5	11.4	21.4	7.5	Mar. 6
Mar. 16	Mng.	16.8	12.6	21.9	8.1	(3 da.) 13.4
	Evng.	15.6	11.4	21.2	7.3	12.8
Mar. 23	Mng.	16.3	12.4	21.3	7.8	19.4
	Evng.	15.4	11.2	20.8	7.3	18.7
Mar. 30	Mng.	16.1	12.0	20.6	7.6	21.2
	Evng.	15.2	11.1	19.8	7.6	19.7

MILK AND BUTTER FAT RECORD

WEEK ENDING	MAUDE			SADIE			KATE		
	Milk	% Fat	Amt. Fat	Milk	% Fat	Amt. Fat	Milk	% Fat	Amt. Fat
Mar. 2	67.2	4.1	2.76	48.6	4.4	2.14	(Fresh	Mar.	6)
Mar. 9	226.1	4.1	9.27	169.4	4.4	7.45	(3	days)	
Mar. 16	226.8	4.1	9.30	168.0	4.4	7.39	78.6	3.6	2.83
Mar. 23	221.9	4.2	9.32	165.2	4.4	7.27	266.7	3.6	9.60
Mar. 30	219.1	4.2	9.20	161.7	4.4	7.11	286.3	3.6	10.31

109. Egg records. — A record of the eggs produced by a flock of hens may be desired for a variety of purposes. If the desire is merely to know whether or not the flock as a whole is profitable, then all that is necessary is to make a record of the eggs produced each day. The same purpose may also be achieved by making note of the number sold together with the number used by the family.

If, on the other hand, it is desired to keep a record of the performance of each hen for the purpose of improving the flock, then a very different record and one much more troublesome to make, will be required. Such records are justified only where intensive efforts are made to improve the breed, since the producing capacity of a hen can be judged quite clearly by an expert by simply examining the bird.

The information desired is the number of eggs laid by each hen (and possibly the size of the eggs). The obvious method for obtaining this information is trap nesting: Every hen is marked with a tag bearing a number. Nests are so arranged that a hen can enter an empty nest to lay but cannot escape. When the hen has laid her egg, the attendant notes the number of the hen, records the egg, and releases her.

A method requiring a more elaborate plant, but much less labor, is the following: A series of pens are arranged around a circle. Suppose there are seven pens numbered in order from 1 to 7. Suppose, then, a hen in pen No. 1 is about to lay. She enters a nest which is so arranged that the only way she can leave it is through a door opening into pen No. 2. In this way every hen which lays an egg in pen No. 1 passes into pen No. 2, and so on through the seven pens.

Suppose a record is made each day of all hens in any pen, say pen No. 7. The nests for this pen are arranged as for regular trap nesting. Clearly a hen gets back into these nests after having laid 7 eggs. Hence 7 eggs is put down for a hen every time she is found in a nest of pen No. 7. Certain

difficulties arise with this arrangement in the case of broody hens, which, however, may be overcome.

EGG RECORD (TOTAL NUMBER OF EGGS)

DAY OF MONTH	JAN.	FEB.	MARCH	APRIL	MAY	JUNE	
1	7	21	40	49	45	43	
2	12	26	41	51	42	47	
31	19	40	51	51	42	40	
Total	401	916	1360	1424	1291	1237	

INDIVIDUAL EGG RECORD (TRAP NESTING)

MONTH OF MARCH

DAY OF MONTH	THE FIRST LINE SHOWS NUMBER OF HEN																	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
1		1			1			1					1			1		1
2	1			1			1		1					1	1		1	
3		1	1		1	1	1				1				1			
31	1			1	1		1	1			1		1	1	1	1		
Total	16	15	10	12	18	8	14	17	6	5	12	9	14	16	20	11	9	8

INDIVIDUAL EGG RECORD (PENS IN SERIES)

PART OF RECORD FOR MONTH OF MARCH

DAY OF MONTH	THE FIRST LINE SHOWS NUMBER OF HEN																	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
1																		
2				7														
3									7	7						7		
4	7	7									7		7					
5								7				7			7			
6							7											
7					7	7											7	7
8			7											7				

110. Milk used by family. — It is usually possible to estimate rather closely the amount of milk used daily by the family. If the estimate is made once a month or at greater intervals, the amount with its value should be charged directly to the Personal Account and credited to Dairy or into a special record (see page 161). In many cases an estimate of the average daily amount may be made once a year. It may be desirable, however, to make a daily record, in which case the form shown below is convenient. All that is necessary is to write one figure each day. The farm value of milk does not vary greatly during the year, and the average may be estimated very closely.

RECORD OF MILK USED BY FAMILY IN THE YEAR 1920 (QUARTS)

DAY	MAR.	APR.	MAY	JUNE	DAY	JULY	AUG.	SEPT.	OCT.	DAY	NOV.	DEC.	JAN.	FEB.
1	2	3	3	3	1					1				
2	2	3	4	4	2					2				
3	3	3	3	3	3					3				
4	2	4	4	4	4					4				
5	1	3	4	4	5					5				
6	2	3	4	4	6					6				
7	3	3	4	3	7					7				

111. Eggs used by family. — A record exactly like the one given above may be used for the eggs consumed by the family. The price of eggs varies greatly from month to month, and hence the number used each month with the value for that month should be charged to the Personal Account, unless a special record with poultry products used by the family is kept, in which case the amount used each month should be entered into this record.

112. Butter used by family. — Butter should be charged to Personal when it is produced and set aside for family use. It should be entered into the Dairy Products Used by Family Record if such a record is kept (see page 161).

PART V

LABORATORY WORK IN COST ACCOUNTING

113. Use of blank forms in cost account book. — The blank book which is intended for use in entering the accounts that follow contains two different kinds of ruled pages.

In the first part the pages are ruled in regular ledger form, two opposite pages to be used for each account (see pages 78, 79). On these all regular "accounts" are to be entered. Usually two pages are given to each account, though four consecutive pages may be given to one account if it is likely to be long. In case each of two accounts is known to be short they may be put on the same two pages. In this case a heavy line is ruled across the middle of the pages, and the name of the second account written above it. Sales Records (see section 64), Feed Records (see section 63), and records of material used in the household should be entered on the ledger-ruled pages. The pages in the latter part of the Cost Account Book are designed for the keeping of labor records and for certain other records noted below. The Labor Records on pages 80, 81, 82, 83 show additional rulings to be made on this blank when used for labor records. In case the name of the operation written at the head of the column sufficiently characterizes the work to be recorded, one line in one column of four spaces is sufficient to record the day's work on the operation. For recording such work an extra line should be ruled along every fourth vertical line in the labor record blank, forming columns with four spaces in each (see pages 80, 81). On page 82 eight spaces are used to record chores, and one of the extra vertical lines is omitted, forming a column of eight spaces. These examples indicate the extra rulings required to adapt the general labor record blank to various kinds of labor records.

On pages 203-205 it is shown how these blanks may be modified so as to obtain convenient forms for entering the various inventory lists, and certain other records such as the Seasonal Work Record and a Milk and Butter Fat Record.

These blanks may be used without any modification for such records as Egg Records, records of eggs or milk used in the house (see pages 199, 200), or they may be modified by simple additional rulings to serve many other purposes. The General Labor Record (see pages 162, 163) may be entered on two opposite pages of these blanks by simply drawing heavy lines across the page to separate the " totals " from the other figures (see pages 162, 163). Graphs representing man-labor and horse-labor distribution (see page 164) may also be made on two opposite pages of these blanks, care being taken to select the vertical unit so that the graphs will not run off the page. The rectangular blank may also be used to make graphs showing the yields in milk and butter fat of each cow. Such graphs may be in the form shown on page 164, or they may be ordinary curve graphs, which are so common. If the graphs representing the yields of several cows are put on the same page, the differences will be very apparent. Several graphs representing butter fat yields of individual cows may be placed similarly.

In case of need the student will be able to design other forms based on these blanks. One of the requirements of a good accountant is that he must be able to design blank forms suited to various purposes. The beginner in accounting usually fails to appreciate the importance of forms that are well fitted for the purposes for which they are used. Good forms serve to prevent confusion and unnecessary labor, and without them the results of the accounting will not be in such form as to be readily used. The general rectangular ruled blank serves as a basis for a large variety of useful forms, and the work of doing the extra ruling is slight.

GENERAL FORM OF BLANK

RULED FOR INVENTORY LIST OF SMALL TOOLS

TABLE FOR INVENTORY LIST OF CHURCH GOODS														
		1921			1922			1923			1924			
Article	No.	Value		No.	Value		No.	Value		No.	Value			
Spades	3	\$2	00	3	\$1	50	4	\$2	50	3	\$2	00		
Pitchforks	9	5	50	8	5	00	10	6	00	9	5	50		
Saws	2	3	00	2	2	50	2	3	00	3	4	00		

RULED FOR LISTING SEASONAL WORK

FORM FOR LISTING PERSONAL WORK										
			1922				1923			
Work or		Field or	Time	Invent.	Value	Invent.	Value			
Material		Crop	Done	Value	Used	Value	Used			
Fall Work		C	1921	\$48 60	\$48 60					
Manure		B	1921	150 00	60 00	\$90 00	\$40 00			

RULED FOR INVENTORY SUMMARY

List					1922		1923		1924	
Real Estate					\$35	000 00	\$35	000 00	\$37	000 00
Animals entered in groups					2	730 00	3	590 00	2	270 00
Seasonal work						824 50		793 70		867 80
Totals					38	554 50	39	383 70	40	137 80

RULED FOR MILK AND BUTTER FAT RECORD

ROUTING FOR MILK AND BUTTER IN RECORD									
		Maude			Sadie				
Week		Amt.	%	Amt.	Amt.	%	Amt.		
Ending		Milk	Fat	Fat	Milk	Fat	Fat		
Mar.	2	67.2	4.1	2.76	48.6	4.4	2.14		
Mar.	9	226.8	4.1	9.27	169.4	4.4	7.45		

GENERAL FORM

RULED FOR INVENTORY LIST OF

Name or Number	Date Born or Purchased					Cost if Purchased		Age if Purchased
Mollie	Born	4-27-17	$\frac{3}{4}$	Holstein				
Spot	"	1-14-18	$\frac{1}{2}$	"				
Daisy	Bought	8-6-19		Pure bred "		\$300 00		5 years

RULED FOR INVENTORY LIST OF

			March 1, 1922				March 1, 1923	
			Value	Total			Value	Total
Kind	Quantity	per Unit	Value		Quantity	per Unit	Value	
Calves	4	\$10 00	\$40 00		6	\$10 00	\$60 00	
Steers	12480 lbs.	081	1060 80		14960 lbs.	08	1196 80	

RULED FOR INVENTORY LIST OF

			March 1, 1922				March 1, 1923	
			Value	Total			Value	Total
Article	Quantity	per Unit	Value		Quantity	per Unit	Value	
Wheat	300 bu.	\$1 40	\$504 00		850 bu.	\$1 25	\$1 062 50	
Oats	680 bu.	60	480 00		720 bu.	500	396 00	

RULED FOR INVENTORY LIST OF

				Date of Purchase	Farm Cost	Expected Life	Yearly Deprec'n
Wagon	Moline, heavy, wide tire		4	17-20	\$96 50	18 yrs.	5 00
Gang Plow	John Deere, 14			8-6-20	137 00	13 "	11 00
Corn Planter	McCormick, single row		4	20-21	103 50	16 "	6 50

OF BLANK

ANIMALS LISTED INDIVIDUALLY

				Value	March 1, each	Year													
	1920			1921		1922			1923			1924							
	\$80	00		\$120	00	\$150	00		\$135	00		\$120	00						
				70	00	90	00		120	00		Sold 9-6-23					\$110		
	260	00		220	00	180	00		140	00		100	00						

ANIMALS LISTED BY GROUPS

			March 1, 1924					March 1, 1925											
			Value		Total			Value		Total									
Quantity	per	Unit			Value	Quantity	per	Unit		Value									

FEEDS AND SUPPLIES

			March 1, 1924					March 1, 1925											
			Value		Total			Value		Total									
Quantity	per	Unit			Value	Quantity	per	Unit		Value									

FARM MACHINERY

				Value	March 1, each	Year													
	1921			1922		1923			1924			1925							
	\$91	00		\$85	00	\$80	00		\$75	00									
	125	00		115	00	105	00		100	00									
				100	00	95	00		85	00									

MATERIAL FOR LABORATORY WORK IN COST ACCOUNTING

SET ONE

The following is a complete record of a year's business on a farm in north central Kansas for the year January 1, 1919, to January 1, 1920. The farm contains 160 acres and is fairly level upland. It is about three miles from a small town and is operated by the owner with the aid of a young son about fourteen years of age, who works on the farm when not in school. The soil is well adapted to the growing of alfalfa, corn, sorghum, cane, wheat, and oats. The season of 1919 was somewhat unfavorable for alfalfa and cultivated crops due to drought during July and August. The record was obtained from the Department of Farm Management of the State College at Manhattan, Kansas.

Accounts as stated below should be kept and arranged in alphabetic order as stated on page 165. Unless otherwise stated, two opposite pages should be allowed for each account: Alfalfa ($\frac{1}{2}$ of two pages); Bills Payable ($\frac{1}{2}$ of two pages); Bills Receivable ($\frac{1}{2}$ of two pages); Buildings; Cane ($\frac{1}{2}$ of two pages); Cash; Cattle ($\frac{1}{2}$ of two pages); Corn ($\frac{1}{2}$ of two pages); Equipment; General Farm ($\frac{1}{2}$ of two pages); Hogs ($\frac{1}{2}$ of two pages); Horses; Interest; Inventory; Labor; Land; Loss and Gain; Personal ($\frac{1}{2}$ of two pages); Poultry ($\frac{1}{2}$ of two pages); Oats ($\frac{1}{2}$ of two pages); Supplies ($\frac{1}{2}$ of two pages); Wheat ($\frac{1}{2}$ of two pages); 1920 Wheat ($\frac{1}{2}$ of two pages). The Alfalfa Account should be started at the top of pages 4 and 5 of the Cost Account Book and the Bills Payable Account in the middle of these pages. The Bills Receivable Account should be started on pages 6 and 7 and the Buildings Account on pages 8 and 9. This arrangement will save several pages of the account book and will make the accounts more compact and more easily handled.

The following Labor Records should be kept, allowing one page to each: Alfalfa, Buildings, Cane, Cattle, Corn, Equipment, General Farm, Hogs, Horses, Land, Manure, Oats, Personal, Poultry, Supplies, 1919 Wheat, 1920 Wheat.

The following special records should be kept, allowing one page for each except Cash Sales from Poultry, which should be given two pages: Dairy Products Used in House, Poultry Products Used in House, Cash Sales from Dairy, Cash Sales from Poultry, Feed Record for Cattle, Feed Record for Horses, Feed Record for Hogs.

There are two accounts covering items of Real Estate, viz. Land and Buildings. Under Buildings are included the farm buildings and their

accessories, such as wells and other improvements immediately connected with them. All other improvements, such as fences, drainage system, or a well in a pasture, are included under Land.

Work on such items as roads that does not fall naturally under any other accounts is charged to the General Farm Account.

In this set there is no exchange labor and no labor done away from the farm for pay.

Inventory: January 1, 1919

Real Estate: Whole farm value (see section 8), \$15,000. Estimated values: Field A, 15 acres @ \$100; Field B, 5 acres @ \$100; Field C, 30 acres @ \$125; Field D, 15 acres @ \$100; Field E, 10 acres @ \$100; Field F, 25 acres @ \$100; Field G, 19 acres @ \$80; Field H (permanent pasture), 35 acres @ \$60; land used by farm buildings, 4 acres @ \$80; land for garden and dwelling, 2 acres @ \$80; dwelling, \$1600; barn, \$1200; implement shed, \$200; henhouse, \$100; hog shed, \$50; fences, \$350.

Horses: 4 horses @ \$90; 2 three-year-old mules @ \$160; 3 two-year-old mules @ \$140; 1 yearling mule, \$80.

Cattle: 3 cows @ \$100; 1 yearling heifer, \$40; 1 yearling bull, \$40; 3 calves @ \$18; 1 cream separator, \$30.

Hogs: 3 brood sows @ \$35; 6 fat hogs @ \$25; 1 boar, \$40.

Poultry: 10 doz. chickens @ \$8 per doz.

Machinery and Tools: 1 wagon, \$40; 1 hayrack, \$15; 1 light wagon, \$25; 1 buggy, \$10; 1 sulky plow, \$40; 1 disk harrow, \$20; 1 lister cultivator, \$20; 1 riding lister, \$45; 2 cultivators @ \$15; 1 grain binder, \$125; 1 grain drill, \$30; 1 mowing machine, \$40; 1 fork and stacker, \$45; 1 stalk cutter, \$15; 2 sets work harness @ \$30; 1 set light harness, \$10; small tools, \$25.

Supplies: 5 T. alfalfa hay @ \$20; 40 bu. oats @ 80¢; 29 T. cane hay @ \$5; 190 bu. corn @ \$1.40; 25 cwt. bran @ \$2.00; 11 bu. wheat @ \$2.25.

Seasonal Work: Fall wheat in Field F: 120 man-hours @ 35¢; 330 horse-hours @ 20¢, and 330 equipment-hours @ 10¢; 25 bu. seed wheat @ \$2.50. Value of residual manure used during year: In Field F, \$50; in Field E, \$25; in Field C, \$60; and in Field D, \$25.

Accounts Receivable: Due from neighbor, \$100.

Accounts Payable: Mortgage on farm, \$2500; other debts, \$275.

Diary of Farm Events from January 1, 1919, to January 1, 1920

The events are listed in chronological order as they occurred from day to day and are in the form in which the farmer had them when he en-

tered them in his books. The numbers of man-hours and horse-hours are given in each instance by means of two consecutive numbers with a comma between them. In every case, the man-hours are given first. In case the tractor is used, this is indicated by the word *tractor* in parentheses. Thus, 6, 12 indicates 6 hours man-labor and 12 hours horse-labor, while 4, 4 (tractor) indicates 4 hours man-labor and 4 hours tractor-use, and 8 indicates 8 hours man-labor and no horse-labor.

The fields were used for crops as follows: Field A, alfalfa; Field B, cane; Fields C and D, corn; Field E, oats; Field F, wheat.

January

Daily Chores: Horses, 1; cattle, 1; hogs, $\frac{1}{4}$; poultry, $\frac{1}{4}$.

1. Paid insurance for 3 years as follows: House, \$15; farm buildings, \$13.50; horses, \$12; cattle, \$6 (enter in Seasonal Work Record).
3. Sold 3 fat hogs weighing 640 lb., \$107.20. Hauled hogs to town, 4, 8 (these figures indicate 4 man-hours and 8 horse-hours).
5. Butchered 3 hogs for home use, value \$90, weight 590 lb.; butchering, 16 (this single figure indicates 16 hours of man-labor).
6. Rendering lard, 7.
10. Sold 31 lb. butter @ 60¢.
11. Paid for labor, \$1.50. Hauling feed to cattle, 5, 10.
12. Putting up ice, 18, 4 (Personal).
14. Putting up ice, 32, 5.
15. Sold 1 lb. butter @ 60¢. Bought 10 cwt. bran @ \$2.00.
17. Putting up ice, 10, 10.
18. Putting up ice, 10, 10.
19. Purchased one horse, \$70. Putting up ice, 6, 6.
21. Hauling feed to cattle, 5, 10.
22. Hauling 4 loads manure to Field D, 5, 10.

Products used in house during January: 5 doz. eggs @ 40¢; 12 lb. butter @ 55¢; 8 gal. milk @ 25¢.

Feeds used during January: Cattle, 4 T. cane hay @ \$5. Horses, 4 T. cane hay @ \$5. Hogs, 6 bu. corn @ \$1.40 (credit Supplies).

February

Daily Chores: Cattle, 1; horses, 1; hogs, $\frac{1}{4}$; poultry, $\frac{1}{4}$.

1. Hauling feed to horses, 4, 8.
2. Hauling feed to cattle, 8, 16.
3. Sold 6 doz. eggs @ 42¢. Neighbor paid debt of \$100 and \$1 interest.

4. Bought: rivets for harness, 40¢; repairs on cream separator, \$6.00; carbide for lights in house, \$4.50; groceries, \$3.90. Sold 5 lb. butter @ 60¢. Going to town, 4, 8 (Personal); hauling feed to cattle, 10, 10.
 5. Hauling 4 loads manure to Field D, 5, 10.
 7. Hauling feed to horses, 10, 10.
 8. Paid for labor, \$2; moving hay in barn, 16 (Supplies).
 9. Hauling 6 loads manure to Field C, 8, 16.
 11. Paid for labor, \$3.25.
 12. Cutting wood for house, 6.
 14. Purchased rope, \$1.90. Cutting wood for house, 6; went to town for rope, 3, 3 (Equipment).
 15. Hauling feed to cattle, 7, 7.
 18. Hauling feed to horses, 4, 8.
 19. Sold: 14 doz. eggs, \$5.88; 18 chickens, \$13.65.
 21. Hauling straw to bed horses, 4, 4; hauling straw to bed cattle, 4, 4.
 22. Hauling straw to bed hogs, 8, 8.
 23. Hauling cobs for fuel, 8, 8 (Personal).
 24. Hauling straw for poultry, 7, 7; hauling feed to cattle, 8, 8.
 26. Sold 21 doz. eggs, \$8.82. Hauling feed to horses, 8, 8.
- Charge to Personal:* 8 doz. eggs @ 38¢; 3 chickens @ 60¢; 13 lb. butter @ 55¢; 10 gal. milk @ 25¢.
- Feeds used during February:* Cattle, 3½ T. cane hay @ \$5. Horses, 7 cwt. bran @ \$2.00; 3 T. cane hay @ \$5. Hogs, 5 bu. corn @ \$1.40 (credit Supplies).

March

Daily Chores: Horses, 1; cattle, 1; hogs, ½; poultry, ½.

3. Hauling feed to cattle, 8, 8.
4. Purchased pitchfork, \$1.25. Sold 21 doz. eggs, \$8.10.
6. Bought: fence repairs, \$4.00 (charge Land); wire for fences, \$6.50. Going for fence repairs, 4, 8 (charge Land); hauling 3 loads manure to Field C, 4, 8.
8. Hauling feed to horses, 8, 8.
10. Sold 29 doz. eggs, \$10.44.
11. Cleaning up barnyard, 11, 2 (General Farm).
13. Purchased disk harrow, \$65. Plowing for oats, 4, 12; going for new disk harrow, 4, 8.
14. Plowing for oats, 8, 24.
15. Used 20 bu. seed oats @ 90¢. Seeding oats, 8, 32.

16. Hauling 6 loads manure to Field C, 8, 16.
 17. Plowing for cane, 4, 12.
 18. Sold 46 doz. eggs, \$15.24. Grinding corn for hogs, 2, 4; plowing for cane, 8, 24.
 19. Plowing patches and sowing cane, 4, 8.
 20. Cutting stalks for corn, 10, 20.
 21. Cutting stalks for corn, 10, 20.
 22. Cutting stalks for corn, 10, 20.
 24. Sold: 7 lb. butter @ 50¢; 30 doz. eggs, \$10.20. Cutting stalks for corn, 10, 20; harrowing cane ground, 8, 16.
 25. Disking for corn, 8, 32.
 26. Purchased 7 cwt. bran @ \$2.10. Plowing for cane, 6, 12; going to town for bran, 3, 6.
 28. Disking for corn, 8, 32.
 29. Disking for corn 8, 32.
 30. Disking for corn, 8, 32.
 31. Disking for corn, 8, 32.
- Charge to Personal:* 12 lb. butter @ 48¢; 12 gal. milk @ 23¢; 14 doz. eggs @ 34¢.
- Feeds used during March:* Cattle, 4 T. cane hay @ \$5. Horses, 8 cwt. bran @ \$2.00; 2 bu. oats @ 80¢; 5 bu. corn @ \$1.40; 3½ T. cane hay @ \$5. Hogs, 4 bu. corn @ \$1.40.

April

Daily Chores: Horses, ½; cattle, 1; hogs, ½; poultry, ½.

1. Paid: hail insurance on wheat, \$25 (charge 1919 Wheat); on oats, \$8 (charge Oats). Sold 30 doz. eggs, \$9.90. Disking for corn, 8, 32.
2. Sold old disk harrow, \$10.
3. Bought 100 eggs for hatching, \$12. Going for eggs for hatching, 2, 2; disking for corn, 8, 32.
4. Hauling 4 loads manure to Field C, 8, 16.
5. Sold: 12 lb. butter @ 48¢; 13 doz. eggs, \$4.29. Planting garden, 4 (Personal); hauling rock for buildings, 8, 16.
6. Hauling sand for buildings, 8, 16.
7. Paid for labor, \$100; bought cement to repair farm buildings, \$8.70. Going for cement, 3, 6; mixing cement for buildings, 8.
8. Used 6 bu. seed corn @ \$2.50. Shelling seed corn, 8.
10. Harrowing for cane, 6, 24; hauling 2 loads manure to Field C, 4, 8.

12. Sold 14 doz. eggs, \$4.16.
13. Cutting seed potatoes, 8.
14. Paid repairs on plow, \$5.10. Sold 21 doz. eggs, \$6.72. Going to town to get machinery repairs, 4, 4; cutting seed potatoes, 4.
15. Planting potatoes, 8, 16.
17. Shelling corn, 6 (Supplies).
19. Shelling seed corn, 6.
20. Hauling 6 loads manure to Field D, 8, 16.
21. Sold 15 doz. eggs, \$5.10. Going to town, 4, 8 (Personal).
22. Listing corn, 8, 32.
23. Bought: hardware for repairing farm buildings, \$1.20; repairs for pump in pasture, \$6.75 (charge Land). Going for pump repairs, 4, 8.
24. Fixing fence, 8, 16.
25. Listing corn, 4, 16; hauling cobs for fuel, 2, 4 (Personal); fixing fence, 4, 8.
26. Sold 19 doz. eggs, \$5.89. Plowing for cane, 8, 16.
27. Listing corn, 9, 36.
28. Listing corn, 9, 36.
29. Listing corn, 8, 32.

Charge to Personal: 14 lb. butter @ 45¢; 12 gal. milk @ 22¢; 14 doz. eggs @ 33¢.

Feeds used during April: Cattle, 4 T. cane hay @ \$5.00; horses, 6 cwt. bran @ \$2.10, 11 bu. corn @ \$1.40, 2½ T. cane hay @ \$5.00, ¼ T. alfalfa hay @ \$20.00; hogs, 7 bu. corn @ \$1.40.

Feed to Poultry January 1 to May 1: 11 bu. wheat @ \$2.20; 16 bu. corn @ \$1.40.

May

Daily Chores: Horses, ¾; cattle, 1; hogs, ½; poultry, ½.

1. Bought: gopher poison, \$4.75 (charge Alfalfa); wire and staples, \$26.40. Going to town, 4, 4 (Personal); fixing fence, 12, 16.
2. Listing corn, 8, 32.
3. Listing corn, 8, 32.
4. Listing corn, 8, 32.
5. Fixing fence, 4, 8; listing corn, 6, 24.
6. Fixing fence, 5, 10.
8. Paid for sharpening lister, \$1. Going to get lister sharpened, 3, 6; fixing fence, 8, 16.
9. Poisoning gophers, 5 (Alfalfa); fixing fence, 4, 8.
11. Cleaning around barns, 8 (General Farm).

12. Making chicken coop, 6; cutting wood for house, 4.
 15. Sold 30 doz. eggs, \$9. Going for paint for house, 4, 4.
 16. Oiling harness, 8; replanting corn, 8.
 22. Sold 32 doz. eggs, \$9.60.
 24. Bought: pliers, 75¢; 1 bu. cane seed, \$2 50. Going to town for cane seed, 4, 4.
 25. Working on road, 8, 16 (General Farm).
 26. Helping clean up cemetery, 8 (Personal).
 27. Sold 15 doz. eggs, \$4.35. Disking corn, 8, 32.
 29. Disking corn, 9, 36.
 30. Disking corn, 9, 36.
- Charge to Personal:* 13 lb. butter @ 42¢; 16 gal. milk @ 23¢; 11 doz. eggs @ 32¢.
- Feeds used during May:* Horses, 1 T. alfalfa @ \$20; 1 cwt. bran @ \$2.10; 24 bu. corn @ \$1.40; 2 bu. oats @ 80¢. Hogs, 12 bu. corn @ \$1.40.

June

Daily Chores: Horses, $\frac{1}{2}$; cattle, $\frac{1}{2}$; hogs, $\frac{1}{3}$; poultry, $\frac{1}{4}$.

1. Disking corn, 9, 36.
2. Bought machinery repairs, 90¢. Sold 33 doz. eggs, \$9.90. Disking corn, 5, 20; mowing yard, 3 (Personal); cutting alfalfa, 5, 10; going for machinery repairs, 3, 3.
3. Putting up alfalfa, 10, 10; sowing cane, 4, 16.
5. Disking corn, 8, 32.
6. Mowing alfalfa, 8, 16.
7. Raking alfalfa, 8, 16.
8. Sold 22 doz. eggs, \$6.82. Hauling alfalfa, 16, 16.
9. Hauling alfalfa, 16, 16.
10. Cultivating corn, 10, 20; mowing alfalfa, 10, 20.
11. Stacking alfalfa, 30, 40.
12. Paid for labor, \$4.50. Stacking alfalfa, 30, 40.
13. Cultivating corn, 9, 36.
14. Sold 5 lb. butter \$2.10.
16. Cultivating corn, 9, 36.
17. Cultivating corn, 9, 18; mowing alfalfa, 10, 20.
18. Stacking alfalfa, 20, 20.
19. Cultivating corn, 18, 36.
21. Sold 27 doz. eggs, \$8.37.
23. Cultivating corn, 18, 36.
24. Cultivating corn, 18, 36.

26. Cultivating corn, 18, 36.
27. Cultivating corn, 18, 36.
28. Bought: 5 gal. machine oil, \$4.20; twine for wheat, 50 lb. @ 18¢; twine for oats, 25 lb. @ 18¢. Sold 35 doz. eggs, \$10.50. Going for machine oil, 3, 3 (Machinery); cultivating corn, 18, 36.
29. Cultivating corn, 18, 36.
30. Cultivating corn, 18, 36.

Charge to Personal: 14 doz. eggs @ 31¢; 14 lb. butter @ 40¢; 11 gal. milk @ 23¢.

Feeds used during June: Horses, 1 T. alfalfa @ \$20; 18 bu. corn @ \$1.40. Hogs, 13 bu. corn @ \$1.40.

July

Daily Chores: Horses, $\frac{3}{4}$; cattle, $\frac{3}{4}$; hogs, $\frac{1}{2}$; poultry, $\frac{1}{4}$.

1. Cutting wheat, 9, 3.
2. Shocking wheat, 9; going to town, 4, 4 (Personal). Bought: fireworks, \$4.20.
3. Paid for labor, \$6.00. Cutting wheat, 9, 36; shocking wheat, 9.
4. Cutting wheat, 9, 36; shocking wheat, 9.
5. Cutting oats, 10, 40; shocking oats, 10.
6. Shocking oats, 10.
7. Cutting weeds, 9, 4 (General Farm).
8. Sold: 34 doz. eggs, \$10.88; 1 hog, \$48.75; 6 lb. butter @ 41¢. Stacking wheat, 8, 8.
10. Purchased harness, \$55.00. Sold 5 lb. butter @ 40¢. Going to town for harness, 4, 8.
11. Mowing alfalfa, 10, 20.
13. Stacking oats, 20, 20.
14. Stacking wheat, 20, 20.
15. Stacking wheat, 20, 20.
16. Mowing alfalfa, 8, 16. (No crop harvested; army worms took it.)
19. Sold: 37 doz. eggs, \$11.84; 2 lb. butter @ 40¢. Stacking wheat, 20, 20.
20. Stacking wheat, 5, 10; fixing granary in barn, 3.
21. Threshing wheat, 20, 20.
22. Threshing oats, 10, 10.
24. Paid: for threshing 330 bu. oats @ 9¢; for threshing 375 bu. wheat, \$40.80. 330 bu. oats @ 80¢ credited to Oats and charged to Supplies. Purchased old wagon, \$28. Going for old wagon, 2, 4.

25. Disking for wheat, 10, 40 (1920 Wheat).

26. Disking for wheat, 10, 40.

27. Disking for wheat, 10, 40.

28. Working on road, 8, 16 (General Farm).

29. Mowing weeds, 4, 8 (General Farm).

31. Sold 29 doz. eggs, \$9.28. Hauling wheat to town, 10, 20.

Charge to Personal: 15 lb. butter @ 40¢; 16 gal. milk @ 25¢; 25 doz. eggs @ 32¢.

Feeds used during July: Horses, 12 bu. corn @ \$1.40; 25 bu. oats @ 80¢; 1 T. alfalfa hay @ \$20. Hogs, 18 bu. corn @ \$1.40.

August

Daily Chores: Horses, 3; cattle, 3; hogs, 1; poultry, 1.

1. Mowing weeds, 5.

2. Mowing weeds, 5.

3. Mowing weeds, 5.

4. Mowing weeds, 10.

5. Bought crank for cistern pump, \$1. Going for crank for cistern pump, 3, 3 (Buildings).

7. Sold 19 doz. eggs, \$6.08. Working on roads, 8, 16.

8. Mowing alfalfa, 8, 16.

9. Raking alfalfa, 6, 12.

10. Stacking alfalfa, 30, 40.

11. Mowing weeds, 8.

12. Sold 22 doz. eggs, \$7.26. Paid for labor, \$6. Mowing weeds, 8.

14. Mowing alfalfa, 10, 20.

15. Hauling coal for house, 4, 8; raking alfalfa, 6, 12; stacking alfalfa, 24, 32.

16. Paid for labor, \$4.50. Hauling coal for house, 8, 16.

17. Hauling coal for house, 8, 16.

18. Hauling feed to cattle, 2, 4; hauling feed to horses, 2, 4.

19. Sold: 14 lb. butter @ 40¢; 6 doz. eggs, \$1.98. Fixing fence, 8, 16.

21. Bought watermelons, \$1.75. Hauling coal for church, 8, 16.

24. Mowing weeds, 8.

26. Sold: 10 lb. butter @ 40¢; 7 doz. eggs @ 33¢. Mowing weeds, 8.

30. Cultivating corn, 8.

31. Fixing fence, 8, 16.

Charge to Personal: 12 lb. butter @ 40¢; 14 gal. milk @ 25¢; 7 doz. eggs @ 33¢; 11 chickens @ 55¢.

Feeds used during August: Horses, 20 bu. oats @ 80¢; 1 T. alfalfa hay @ \$20. Hogs, 22 bu. corn @ \$1.40.

September

Daily Chores: Horses, $\frac{3}{4}$; cattle, $\frac{3}{4}$; hogs, $\frac{1}{4}$; poultry, $\frac{1}{4}$.

2. Sold: 6 doz. eggs, \$2.10; 5 lb. butter @ 42¢. Repairing barn, 8.
 4. 141 shocks corn fodder to Supplies @ 35¢; 52 shocks corn fodder from Supplies to Cattle @ 35¢. Sold 12 doz. eggs, \$4.20. Going to town for glass, 4, 4 (Buildings).
 5. Cutting corn, 8.
 6. Helping dig grave for neighbor, 8 (Personal).
 7. Sold 6 lb. butter @ 42¢.
 9. Cutting corn, 8.
 11. Repairing barn, 8.
 12. 25 T. alfalfa to Supplies @ \$20.
 15. Hauling corn fodder to cattle, 8, 16.
 18. Hauling feed to cattle, 8, 16.
 19. Breaking mules, 8, 4.
 21. Hauling sand to use in repairing barn, 8, 16.
 22. Sold: 14 doz. eggs, \$5.04; 148 bu. wheat @ \$2.16. Hauling wheat to town, 10, 20.
 23. Hauling rock to use in repairing barn, 8, 16.
 25. Bought 25 bu. seed wheat @ \$2.50 (1920 Wheat). Repairing barn, 8; going for seed wheat, 4, 8.
 26. Sold 127 bu. wheat @ \$2.21. Hauling wheat to town, 8, 16.
 27. Hauling rock for barn, 8, 16.
 28. Drilling wheat, 9, 36 (1920 Wheat).
 29. Drilling wheat, 9, 36.
 30. 22 T. cane hay to Supplies @ \$6. Cut cane, 9, 18.
- Charge to Personal:* 12 lb. butter @ 42¢; 16 gal. milk @ 27¢; 12 doz. eggs, \$4.20; 14 chickens @ 40¢.

Feeds used during September: Horses, 14 bu. corn @ \$1.40; $\frac{3}{4}$ T. alfalfa @ \$20. Hogs, 19 bu. corn @ \$1.40.

October

Daily Chores: Horses, $\frac{3}{4}$; cattle, $\frac{3}{4}$; hogs, $\frac{1}{4}$; poultry, $\frac{1}{4}$.

2. 14 shocks corn fodder (credit Supplies) to Cattle @ 35¢. Sold 5 doz. eggs, \$1.00.
4. Shocking cane, 8, 16.
5. Drilling wheat, 9, 36.

6. Sold 14 lb. butter @ 44¢. Shocking cane, 8, 16.
 7. Building fence, 9, 18.
 9. Sold 2 mules for \$450. (Took note due Dec. 9, with 8% interest. Charge Bills Receivable.) Bought: wagon trucks, \$45; halter for horse, 75¢ (charge Horses). Going for wagon trucks, 4, 8.
 10. Helping father move, 8, 16.
 11. Husking corn, 8, 16.
 13. Sold 18 doz. eggs, \$7.02.
 14. Stacking cane, 9, 18.
 15. Digging potatoes, 8, 16 (Personal).
 16. Cleaning up around henhouse, 8, 16 (Poultry).
 17. Husking corn, 8, 16.
 20. Sold 13 lb. butter @ 44¢.
 23. Husking corn, 9, 18.
 24. Husking corn, 8, 16.
 26. Husking corn, 8, 16.
 27. Sold: 17 lb. butter @ 44¢; 28 chickens, \$21.00. Hauling feed to horses, 4, 8; hauling feed to cattle, 4, 8; husking corn, 9, 18.
 28. Husking corn, 9, 18.
 29. Husking corn, 9, 18.
 30. Going for boar, 8, 16.
 31. Hauling rock for barn, 8, 16.
- Charge to Personal:* 14 lb. butter @ 44¢; 24 gal. milk @ 28¢; 12 doz. eggs @ 37¢; 4 chickens @ 75¢.
- Feeds used during October:* Cattle, 1½ T. cane hay @ \$6. Horses, 21 bu. corn @ \$1.40; 1 T. alfalfa hay, \$20; 2 T. cane hay @ \$6. Hogs, 25 bu. corn @ \$1.40.

November

Daily Chores: Horses, ½; cattle, 1; hogs, ½; poultry, ½.

1. Hauling rock for barn, 8, 16.
2. Hauling rock for barn, 8, 16.
3. Sold 11 lb. butter @ 45¢. Hauling wheat to town, 4, 8.
4. Hauling feed to cattle, 4, 8; repairing henhouse, 4.
6. Hauling sand for barn, 8, 16.
7. Bought: hame straps, 50¢ (charge Horses); lumber for farm buildings, \$18.90. Hauling wheat to town, 4, 8; hauling lumber for farm building repair, 4, 8.
8. Repairing house, 16.
9. Fixing manger in barn, 8.

10. Hauling wheat to town, 4, 8; hauling lumber for repairs on house, 4, 8.
 11. Sold bull, \$90.
 14. Working on barn, 8.
 16. Hauling feed to cattle, 4, 8; hauling feed to horses, 4, 8.
 20. Sold: 20 lb. butter @ 45¢; 8 doz. eggs, \$3.20.
 21. Bought 22 pigs for \$100 (weight 1350 lb.). Sold 6 fat hogs for \$125.40 (weight 1610 lb.). Taking hogs to town and bringing pigs, 8, 16.
 23. Hauling 4 loads manure to Field F, 8, 16.
 24. Sold 100 bu. wheat @ \$2.42. Bought 1 calf, \$5. Grading around house, 4, 8.
 25. Hauling feed to horses, 4, 8; hauling feed to cattle, 4, 8.
 26. 800 bu. corn to Supplies @ \$1.45.
 27. Sold: 7 doz. eggs, \$3.01; 3 fat hogs, \$87.50 (weight 625 lb.); 15 lb. butter @ 46¢. Paid for setting tire on buggy, \$2.50. Hauling hogs to town, 4, 8.
 28. Painting henhouse, 8.
 29. Sold 22 old hens, \$16.22. Working on barn, 8.
- Charge to Personal:* 9 lb. butter @ 45¢; 20 gal. milk @ 27¢; 9 doz. eggs @ 42¢; 4 chickens @ 75¢.
- Charge to Supplies:* Stalk pasture, \$15 (credit Corn).
- Feeds used during November:* Horses, 14 bu. corn @ \$1.45; 2 T. cane hay @ \$6. Cattle, 1 T. cane hay @ \$6; 1 T. alfalfa hay @ \$20; stalk pasture \$15. Hogs, 30 bu. corn @ \$1.45.

December

Daily Chores: Horses, $\frac{3}{4}$; cattle, 1; hogs, $\frac{1}{2}$; poultry, $\frac{1}{4}$.

1. Banking up around house for winter, 8, 16 (Personal).
2. Sold: 7 lb. butter @ 46¢; 7 doz. eggs @ 45¢. Hauling feed to cattle, 4, 8; going to town, 4 (Personal).
5. Hauling 5 loads manure to Field F, 8, 16.
6. Cutting wood for house, 8.
7. Sold: 10 lb. butter @ 48¢; 6 doz. eggs @ 45¢.
8. Cutting and hauling wood for house, 8, 8.
9. Received payment of note for \$450; received interest on this note \$6.
10. Cutting wood for house, 8.
11. Paid taxes as follows: Land, \$52.56; Buildings, \$17.50; Machinery, \$2.25; Cattle, \$3.56; Horses, \$10.50; Hogs, 60¢; Poul-

try, 54¢. Sold 4 mules, \$770. Bought halters for mules, \$2 (charge Horses). Paid: "other debts," \$275; interest on "other debts," \$16.30. Taking mules to town, 4, 4 (Horses).

14. Going to town, 4, 8 (Personal).

15. Hauling 3 loads manure to Field F, 5, 10.

18. Sold 2 hogs, \$114.80 (weight 820 lb.). Paid interest on mortgage at 6½%, \$162.50. Hauling hogs to town, 3, 6.

22. Sold: 8 doz. eggs @ 46¢; 8 lb. butter @ 50¢.

23. Sold 5 chickens, \$4. Horsehide taken for personal use, \$10. Paid: for machinery repairs, \$1.50; for veterinary work on horses, \$6. Going to town, 4, 8 (Personal).

29. Traded boars with neighbor, receiving \$5 in cash. Sold 7 doz. eggs @ 46¢.

Charge to Personal: 4 doz. eggs @ 45¢; 10 lb. butter @ 48¢; 18 gal. milk @ 28¢.

Feeds used during December: Horses, 14 bu. corn @ \$1.45; 1½ T. cane hay @ \$6. Cattle, 9 shocks fodder @ 35¢. Hogs, 49 bu. corn @ \$1.45.

Feed to Poultry May 1 to January 1: 45 bu. corn @ \$1.40.

Value Wood used in House: \$12 (credit General Farm, charge Personal).

Value of Operator's Labor: \$600.

Value of Family Labor: \$240.

Credit Manure: Cattle, 25 T. @ \$1.50. Horses, 28 T. @ \$1.50. Poultry, 1 T. @ \$1.50.

Inventory: January 1, 1920

Real Estate: Whole farm value, \$15,500. Estimated values: Field A, 150 acres @ \$100; Field B, 5 acres @ \$100; Field C, 30 acres @ \$125; Field D, 15 acres @ \$100; Field E, 10 acres @ \$100; Field F, 25 acres @ \$100; Field G, 19 acres @ \$80; Field H (permanent pasture), 35 acres @ \$60; land used for farm buildings, 4 acres @ \$80; land for yard, garden, and dwelling, 2 acres @ \$80; dwelling, \$1550; barn, \$1250; implement shed, \$180; henhouse, \$90; hog shed, \$40; fences, \$400.

Horses: 4 head @ \$80.

Cattle: 3 cows @ \$95; 1 two-year-old heifer @ \$70; 3 yearlings @ \$40; 3 calves @ \$20; 1 cream separator, \$25.

Hogs: 4 brood sows @ \$35; 1 boar, \$40; 1 fat hog, \$25; 31 shoats @ \$6.

Poultry: 9 doz. chickens @ \$8.

Feed and Supplies: 679 bu. corn @ \$1.45; 14 T. cane hay @ \$6; 19½ T. alfalfa hay @ \$20; 301 bu. oats @ 90¢; 66 shocks corn fodder @ 35¢.

Machinery: 2 wagons @ \$35; 1 hayrack, \$10; 1 light wagon, \$20; 1 sulky plow, \$35; 1 disk harrow, \$60; 1 lister cultivator, \$15; 1 riding lister, \$37.50; 2 cultivators @ \$12.50; 1 grain binder, \$105; 1 grain drill, \$20; 1 mowing machine, \$35; 1 fork and stacker, \$35; 1 stalk cutter, \$10; 3 sets work harness, \$85; small tools, \$22.50.

Bills Payable: Mortgage on farm, \$2500.

Since no labor (by horses or equipment) is charged to Labor, the cost of man-labor per hour can be found at once. By a little study it is found that 8¢ per hour is a close estimate for the cost per hour of equipment-use. This is the rate used in closing the Horse Account. Horses and Equipment are charged (by estimate) with \$70 and \$15 respectively for the use of buildings.

MATERIAL FOR LABORATORY WORK IN COST ACCOUNTING

SET TWO

The data of this set, which are from a farm in Sioux County, Iowa, for the year Feb. 1, 1919, to Jan. 31, 1920, were obtained from the Department of Farm Management of the Iowa State College at Ames, Iowa.

The following accounts should be arranged in alphabetical order and, unless otherwise stated, two opposite pages allowed for each account: 1918 Alfalfa; 1919 Alfalfa; Auto ($\frac{1}{2}$ of two pages); Tractor ($\frac{1}{2}$ of two pages; put Auto and Tractor on the same pages); Beef Cattle; Bills Receivable ($\frac{1}{2}$ of two pages); 1918 Corn; 1919 Corn; Dairy; Equipment; Hogs; Horses; Interest ($\frac{1}{2}$ of two pages; put Interest and Bills Receivable on the same pages); Inventory; Labor; Loss and Gain ($\frac{1}{2}$ of two pages); Oats ($\frac{1}{2}$ of two pages); Personal; Real Estate; Spring Wheat and Winter Wheat (each $\frac{1}{2}$ of two pages).

The following labor records should be kept, allowing one page for each unless otherwise stated: 1918 Alfalfa, 1919 Alfalfa, Beef Cattle (2 pages), 1919 Corn (2 pages), 1920 Corn, Dairy (2 pages), Equipment, Exchange Labor (2 pages), Hogs (2 pages), Horses, Labor, Manure, Oats, Personal, Real Estate, Spring Wheat, Tractor (put labor record for Tractor, Auto, and Shelling Corn all on the same page), Winter Wheat. There should also be a General Labor Record (see pages 162-163) and a Tractor Works Record showing the total work done by the tractor.

A graphic representation may be made of the time distribution of man-labor, horse-labor, and the use of the tractor. Material for these graphs will be found in the General Labor Record and in the Tractor Work Record.

In this set no separate account is kept with Buildings, land and buildings being entered under the one account with Real Estate. At the end of the year the charges to be made to the various accounts for the use of buildings are estimated, and the amounts are credited to Real Estate. A sale of apples on the trees (see page 232) is also credited to Real Estate, though all other items connected with the orchard are entered under Personal.

There is no account with Supplies, such items as corn, hay, and oats being kept under separate accounts until finally disposed of. These separate accounts furnish information as to gains or losses resulting from keeping certain products instead of selling them. Thus the account with 1918 Corn shows a gain of about \$150, while the account with 1918 Alfalfa shows a loss of about \$370. In case there are large amounts of certain grains and feeds and great fluctuations in price, such gains or losses may be very considerable, and the information furnished by the separate accounts may be important. When Supplies are kept under separate accounts, as in this set, the economy of work resulting from separate Feed Records is largely reduced (see section 63). For this reason feeds are charged directly to the animals and credited to the separate accounts at the time the feeds are set aside.

The record with Exchange Labor is not an essential part of the farm accounting but contains interesting information about the amount of such work done for others and the amount done for us by others. The labor entered into the various Labor Records includes the labor done for us by others but not that done by us for others. One point should be noticed: Tractor work to the amount of 14 hours is done for others, and this is paid for in man-labor and horse-labor done for us by others. Hence the cost of this tractor work is charged partly to Labor, and partly to Horses. For the sake of simplicity no charge on this account is made to Equipment.

In the General Labor Record the work done on the farm, whether by our own labor or by exchange labor, is included, but not the exchange labor done by us for others. In this way the General Labor Record is made to show the time distribution of the labor actually required on the farm. In the General Tractor Work Record the Work Record for horses is included for the days when the tractor actually works. This shows whether or not the tractor helped to take the "peak" off the horse work; that is, whether the tractor reduced the number of horses needed in periods of most intense work.

No account is kept with Cash nor with transactions had by the

farmer outside the general business of farming. However, the Cash On Hand and Bills Receivable acquired during the year are given and should be entered in the General Inventory to show the farmer's total financial progress during the year. If it is desired to keep a complete double entry set of books, a Cash Account should be kept. The amount by which the cash on hand at the end of the year falls short of the balance of the Cash Account may then be charged to Personal and credited to Cash.

Inventory: February 1, 1919

1918 Corn: 4600 bu. ear corn @ \$1.20; 45 acres stalk @ \$1.00; 20 bu. seed corn @ \$1.50; 330 bu. (1917) corn @ \$1.25.

1918 Alfalfa Hay: 47 T. @ \$25.

Equipment: Total value, \$2416.

Farm: 320 acres @ \$300.

Hogs: 39 white pigs, 2730 lb. @ 14½¢; 34 red shoats, 5950 lb. @ 16¢; 10 bu. oats @ 64¢.

Horses: 11 work horses, total value, \$2150; 6 young horses, total value, \$550; 10 T. alfalfa @ \$20; 50 bu. oats @ 64¢; 300 bu. shelled corn @ \$1.25.

Dairy Cattle: 8 milk cows @ \$125; 1 bull, \$150; 4 heifers @ \$100; 3 young stock @ \$60; 12 T. alfalfa @ \$20; 20 bu. corn @ \$1.25; 10 bu. oats @ 64¢.

Beef Cattle: 38 head steers @ \$77; 5 calves @ \$40; 3 T. alfalfa @ \$20.

Spring Wheat: 200 bu. @ \$2.

Winter Wheat: 10 acres seeding, total cost, \$57.29.

Ford Car: Car, \$25; supplies, etc., \$8.40.

Tractor: Fordson Tractor, \$675; 60 gal. kerosene, \$7.80; tractor plow, \$130.

1919 Corn: Fall plowing, \$188.57.

1919 Alfalfa: New seeding, \$77.15.

Financial

Cash on hand, \$193.70; accounts payable, \$2348.87.

Diary of Farm Events from February 1, 1919, to January 31, 1920

The events are listed in chronological order as they occurred from day to day and are in the form in which the farmer had them when he entered them in his books. The numbers of man-hours and horse-hours are given in each instance by means of two consecutive numbers with a comma between them. In every case, the man-hours are given first.

In case the tractor is used, this is indicated by the word *tractor* in parenthesis. Thus, 6, 12 indicates 6 hours man-labor and 12 hours horse-labor, while 4, 4 (tractor) indicates 4 hours man-labor and 4 hours tractor-use. Six hours man-labor and no horse-labor would be indicated by 6. 14, 36, 5 (tractor) indicates 14 hours man-labor, 36 hours horse-labor, and 5 hours tractor-work.

The time required daily for chores is given in the first of each month unless the time is changed during the month (see section 58).

February

Daily Chores: Beef cattle, 2, 3½; dairy cattle, 3½; hogs, 1; horses, 2.

3. Hauling hay for beef cattle, 2, 4.
4. Hauling hay for horses, 2, 4.
10. Helping Morgan haul hogs, 5, 10.
11. Hauling hay and bedding to beef cattle, 10, 10.
12. Extra work on dairy cattle, 4, 8; hauling hogs to town, 8, 16.
Paid on note, \$348.87. Sold 13 hogs, 3720 lb., \$604.50.
16. Hauling feed to town for grinding, 4, 8 (Dairy Cattle).
17. Bought 7 hogs, \$130. Hauling hogs from sale, 2, 4; helping Warren haul hogs, 5, 10 (Exchange Labor). Chores on beef cattle changed to 1½, 2½; chores on dairy cattle changed to 4.
18. Cleaning calf pen (Dairy), 3; getting bedding for hogs 4, 4.
19. Hauling hay and bedding for beef cattle, 10, 10.
20. Delivering heifer (to Dairy), 2; hauling hay for horses, 4, 4; oiling and greasing equipment, 3. Sold dairy heifer for \$125.
21. Working on tractor, 3. Paid taxes \$10.00 on horses and \$6.68 on dairy cattle.
23. Paid \$9.90 for gasoline and repair on Ford.
25. Helping move Morgan's and Kelley's men, 10, 20 (Exchange Labor).
27. Piling wood in orchard, 3, 0 (charge Personal).
28. Check for milk and butter sold in February, \$121.26. Paid hired help for February, \$65.

Feeds used during February: Beef cattle, 404 bu. 1918 corn, \$492.55; 6 T. 1918 alfalfa, \$150. Dairy cattle, 11½ acres 1918 corn stalks, \$11.25. Horses, 33½ acres 1918 corn stalks, \$33.75; 1½ T. alfalfa, \$38.75. Hogs, 12 bu. 1918 corn, \$14.40.

March

Daily Chores: Beef cattle, 1; dairy cattle, 4; hogs, 1; horses, 2.

1. Helping neighbor with cattle, 3, 3; bedding for beef cattle, 3, 4.

3. Sold 2 veal calves, \$22 (Dairy Cattle). Bedding for hogs, 3, 3; hauling ice for neighbor, 8, 16; helping Keene haul hogs, 5, 10.
4. Hauling ice, 8, 16; packing ice, 4, 0 (all for neighbor).
5. Hauling and packing ice for neighbor, 12, 8.
6. Measuring hay stack (1918 alfalfa), 1; hauling hay to beef cattle, 4, 4; grinding feed for dairy cattle, 4, 2 (tractor); trading Fords, 2, 0. Transferred 82 bu. corn from Horses to Dairy Cattle, \$102.50. Sold 8.4 T. 1918 alfalfa, \$210.30. Bought new Ford car, \$512.50.
7. Hauling hay to beef cattle, 6, 6; bedding beef cattle shed, 3. Borrowed \$1189.14 from C. J. S.
8. Hauling hay to beef cattle, 3, 4; measuring alfalfa stack, 1; cleaning calf pen (Dairy), 2; bedding yards for beef cattle, 1; hauling hay to horses, 2, 4. Sold 20 T. 1918 alfalfa, \$486.05.
10. Bedding hog shed, 3, 6; sawing wood (Personal), 5, 2½ (tractor); school meeting, 3.
11. Moving help to farm (charge Labor), 10, 20; sawing wood (Personal), 9, 3 (tractor). Bought 150 bu. corn for beef cattle, \$150.
12. Bedding yards and shed for beef cattle, 3, 6; taking milk to town, 3, 6.
13. Hauling hogs to town, 8, 16; helping neighbor haul hogs, 4, 8. Sold 13 hogs, 2550 lb., \$425.80.
15. Check for milk and butter, \$115.38.
17. Cleaning seed wheat (charge Spring Wheat), 8.
18. Helping neighbor haul hogs, 10, 20.
19. Hauling wood, 2, 4 (charge Labor); going to town for repairs for tractor, 4; hauling wood, 4, 8 (Personal).
20. Hauling hay for beef cattle, 7, 7; hauling hay for horses, 3, 6; overhauling tractor, 4.
21. Hauling hay for beef cattle, 7, 7; hauling hay for horses, 2, 4; bringing tractor, 3. Paid for gasoline and expense on Ford car, \$12. Sold 24½ bu. spring wheat, \$50.44.
22. Cleaning seed wheat, 10, 4; cleaning out brush, 3 (Personal). Bought 70½ bu. spring wheat for seed, \$141.
24. Altering hogs, 3; disking for spring wheat, 16, 64; disking for spring wheat, 6, 6 (tractor).
25. Working on tractor, 2. Transferred 110 bu. corn from Horses to Beef Cattle, \$137.50.
26. Breaking colt (charge Horses), 6, 6; treating seed 4 (Spring Wheat).
27. Hauling 8 loads manure for 1919 Corn, 10, 16.

28. Hauling 5 loads manure for 1919 corn, 5, 10; disking for spring wheat, 8, 48; disking for spring wheat, 4, 4 (tractor).
29. Disking for spring wheat, 8, 32; disking for spring wheat, 7, 7 (tractor); seeding spring wheat, 8, 32. Sold: 2 horses, \$615; dairy cow, \$150; bull calf (Beef Cattle), \$65.
31. Seeding spring wheat, 10, 40; disking for spring wheat, 15, 60; working on tractor, 4. Paid hired help for month, \$65. Tractor expenses for March, \$121.67.

Feeds set aside during March: Beef cattle, 180 bu. 1918 corn, \$225; 8½ T. alfalfa, \$215. Hogs, 30 bu. 1918 corn, \$37.50. Horses, 4½ T. alfalfa, \$112.50.

April

Daily Chores: Beef cattle, 1; dairy cattle, 5; hogs, 1; horses, 3.

1. Disking for spring wheat, 20, 40, 10 (tractor); seeding spring wheat, 10, 40. Bought formaldehyde for treating seed wheat (charge Spring Wheat), \$1.80.
3. Bought medicine for dairy cattle, \$1.
4. Grinding feed for dairy cattle, 3, 2 (tractor); helping neighbor shell corn, 4, 8; shelling corn, 15, 12 (1918 Corn).
5. Seeding spring wheat, 19, 76; disking for spring wheat, 14, 36, 5 (tractor).
7. Testing seed corn, 2.
8. Disking for Grover, 18, 36, 9 (tractor) (Exchange Labor).
9. Disking for Grover, 5, 20; repairing farm equipment, 3; helping neighbor fan wheat, 3.
10. Paid interest on note, \$28.81. Breaking colt, 6, 6.
11. Repairing farm equipment, 2; working on fence, 2.
12. Disking for spring wheat, 4, 4 (tractor); helping Grover disk for spring wheat, 15, 40, 5 (tractor).
14. Helping Grover disk for wheat, 5, 20; bringing out man to paper, 2, 4 (Personal); working on fence, 2, 2 (tractor).
16. Bedding horses, 3, 6; hauling hay for beef cattle, 4, 8; hauling 6 loads manure to garden, 8, 8 (charge Personal).
17. Hauling spring wheat to mill, 7, 14 (Spring Wheat); helping Grover disk for wheat, 10, 20. Sold 100¾ bu. spring wheat, \$211.40.
18. Dragging spring wheat, 4, 4 (tractor); seeding oats, 8, 32. Sold 1 T. alfalfa, \$19.20. Check for milk and butter, \$237.15. Bought 67 bu. oats for seed, \$40.20.

19. Seeding oats, 3, 12; plowing garden, 5, 10 (Labor).
 21. Hauling 8 loads manure for corn, 8, 24; plowing for corn, 4, 4 (tractor); dragging for oats, 4, 4 (tractor).
 22. Sold 23 bu. spring wheat, \$49. Grinding feed for dairy cattle, 3, 2 (tractor); plowing for corn 4, 4 (tractor); disking for corn, 5, 20.
 23. Hauling 5 loads manure for corn, 5, 15; plowing for corn, 9, 9 (tractor); hauling hay for beef cattle, 4, 8.
 24. Hauling 10 loads manure for corn, 9, 27; disking for corn, 9, 9 (tractor).
 25. Hauling 9 loads manure for corn, 10, 30; dragging for corn, 6, 6 (tractor).
 26. Hauling 9 loads manure for corn, 10, 30; plowing for corn, 8, 8 (tractor).
 28. Helping neighbor shell corn, 20, 40.
 29. Helping neighbor shell corn, 6; shelling corn, 60, 88.
 30. Testing seed corn, 2; plowing for corn, 5, 5 (tractor); hauling cinders for hogs, 4, 8; repairing fence, 4. Sold 20 bu. corn, \$30. Credit Beef Cattle for steer killed by railroad, \$66.12. Paid: expense for Ford car for month \$10.35; hired help for month, \$70; tractor expenses for April, \$49.40.
- Feeds set aside during April:* Beef cattle, 205 bu. 1918 corn, \$299.25; 3 T. alfalfa, \$75. Horses, 315 bu 1918 corn, \$458.75; $\frac{3}{4}$ T. alfalfa, \$15.
- Transferred during month:* from Horses to Beef Cattle, 250 bu. corn, \$351.50; from Horses to Dairy Cattle: 45 bu. oats, \$28.80; 90 bu. corn, \$125.50.

May

Daily Chores: Beef cattle, 1; dairy cattle, 5; hogs, 1, horses, 2.

1. Shelling corn, 108, 128; hauling cinders to hogs, 4, 8. Sold 2038 bu. 1918 corn, \$3220.04. Bought 160 acres Dakota land, \$1787.70.
2. Hauling hay to beef cattle, 3, 6; cleaning up after corn sheller, 4, 4.
3. Hauling 8 loads manure to corn, 8, 24; plowing for corn, 8, 8 (tractor).
5. Hauling 8 loads manure to corn, 8, 24; plowing for corn, 9, 9 (tractor).
6. Hauling hay to beef cattle, 3, 6; hauling hay to dairy cattle, 3, 6. Paid for repair of machinery, \$9.80.
7. Hauling 7 loads manure to corn, 8, 24; plowing for corn, 9, 9

- (tractor). Bought 98 head of steers, 46,690 lb., \$3735.20. Paid cost of shipment of steers, \$46.75.
8. Hauling 9 loads of manure to corn, 9, 27; buying beef cattle, 15.
 9. Driving beef cattle, 10, 10; hauling 4 loads manure to corn, 4, 12.
 10. Plowing for corn, 3, 3 (tractor); disking for corn, 7, 28; grading seed corn, 3. Paid for shelling 1918 corn, \$71.20.
 12. Working on tractor, 6; grading seed corn, 3; disking for corn, 9, 36.
 13. Marking and driving cattle, 5, 2; disking and dragging for corn, 15, 50. Paid on note, \$2000.
 14. Planting corn, 9, 18; disking for corn, 5, 20; dragging for corn, 5, 20.
 15. Planting corn, 8, 16; dragging for corn, 9, 36; plowing for corn, 3, 3 (tractor).
 16. Disking for corn, 10, 40; plowing for corn, 5, 5 (tractor); spraying orchard, 20, 20.
 17. Disking for corn, 8, 32; plowing for corn, 8, 8 (tractor).
 18. Driving beef cattle, 4, 4; shelling and grading seed corn, 4. Bought 37 bu. oats for dairy cattle, \$23.60.
 19. Bought Liberty bond, \$100. Plowing for corn, 11, 11 (tractor); helping neighbor haul hogs, 3, 6.
 20. Transferred 17 bu. 1918 seed corn to 1919 corn, \$34. Planting corn, 10, 20.
 21. Dragging for corn, 10, 40: planting corn, 10, 20; disking for corn, 10, 40.
 22. Dragging for corn, 10, 40; plowing for corn, 3, 3 (tractor); hauling hay for beef cattle, 3, 6; hauling hay for work horses, 2, 4.
 23. Working on fences (charge Real Estate), 2, 4; dragging for corn, 4, 16; plowing for corn, 14, 32.
 24. Disking for corn, 5, 20; dragging for corn, 5, 20; planting corn, 4, 8.
 26. Dragging for corn, 10, 40; planting corn, 20, 40.
 27. Dragging for corn, 10, 40; washing Ford car, 2; helping neighbor haul hogs, 7, 14.
 28. Dragging for corn, 10, 40.
 29. Dragging for corn, 10, 40; breeding mares, 2, 4; hauling salt for beef cattle, 2, 4.
 31. Dragging for corn, 3, 12; hauling brush from orchard, 4, 4. Received check for milk and butter, \$262.32. Paid hired help for month, \$70.

Feeds set aside during May: Beef cattle, 300 bu. corn, \$450; $5\frac{1}{4}$ T. alfalfa, \$128.75. Hogs, 250 bu. corn, \$375. Dairy cattle, $1\frac{1}{2}$ T. alfalfa, \$33.75. Horses, $1\frac{1}{4}$ T. 1918 alfalfa, \$38.75.

June

Daily Chores: Beef cattle, 1; dairy cattle, 4; hogs, $\frac{1}{4}$; horses, 2.

3. Trip to town for visitor, 3, 6 (Personal).
 4. Trip to town with visitor, 5, 10. Paid insurance: on dairy cows, \$6.57; on horses, \$8.00.
 5. Helping neighbor plow corn, 5, 10; hauling hogs to town, 2, 4; hauling milk, 8, 16; plowing corn, 3, 6; hauling ashes, cleaning up, 4, 8 (Real Estate). Sold hogs, \$40.70.
 6. Plowing corn, 9, 18.
 7. Plowing corn, 30, 60; hauling milk, 6, 12.
 11. Plowing corn, 15, 30.
 12. Plowing corn, 30, 60.
 13. Plowing corn, 20, 40.
 14. Plowing corn, 20, 40. Paid on note, \$1473.55.
 16. Plowing corn, 20, 40.
 17. Plowing corn, 20, 40.
 18. Plowing corn, 20, 40; mowing alfalfa, 10, 20. Borrowed from G. J. S., \$337.70.
 19. Plowing corn, 20, 40; mowing alfalfa, 5, 10. Received check for milk and butter, \$244.70.
 20. Plowing corn, 20, 40; mowing alfalfa, 15, 30; raking alfalfa, 5, 10.
 21. Plowing corn, 10, 20; raking alfalfa, 5, 10; mowing alfalfa, 15, 30; hauling hay for horses, 3, 6; hauling hay for beef cattle, 3, 6.
 23. Raking alfalfa, 5, 10; stacking alfalfa, 25, 25; plowing corn, 5, 10; repairing stacker, 5. Received insurance on steer killed by railroad, \$50.
 24. Stacking alfalfa, 50, 50.
 25. Stacking alfalfa, 50, 50.
 26. Stacking alfalfa, 30, 30; plowing corn, 12, 24.
 27. Helping neighbor plow corn, 15, 30. Paid on note, \$53.29.
 28. Helping neighbor plow corn, 15, 30; plowing corn, 15, 30.
 30. Plowing corn, 50, 100. Paid: shipping expense on beef cattle sold, \$192.41; hired help for June, \$100; tractor, \$89.25.
- Feeds set aside during June:* Beef cattle, 495 bu. 1918 corn, \$742.50; $2\frac{1}{4}$ T. 1919 alfalfa, \$55. Dairy cattle, $1\frac{1}{4}$ T. 1918 alfalfa, \$31.25. Horses, $\frac{1}{4}$ T. 1919 alfalfa, \$15.

July

Daily Chores: Dairy cattle, 4; horses, 2.

1. Plowing corn, 50, 100.
2. Stacking alfalfa, 25, 25; hauling hogs to town, 20, 40. Sold 46 hogs, 10,420 lb., \$2039.10
3. Stacking alfalfa, 20, 20; cutting weeds (General Farm), 8.
5. Driving cattle to market, 8, 8; helping neighbor plow corn, 20, 40.
7. Helping neighbor plow corn, 20, 40. Transferred dairy bull to Beef Cattle, \$198. Sold: 38 steers, 40,250 lb., \$5635; 4 bulls, 4630 lb., \$434.70.
8. Plowing corn, 20, 40; cutting weeds (Real Estate), 8.
9. Plowing corn, 20, 40; cutting weeds (Real Estate), 8.
10. Plowing corn, 20, 40; cutting weeds (Real Estate), 8.
11. Plowing corn, 30, 60; cutting winter wheat, 16, 32. Paid service fees for horses, \$60.
12. Plowing corn, 25, 50; shocking winter wheat, 15. Gasoline and repair for Ford car, \$85.65.
14. Cutting weeds (charge Real Estate), 20; hauling 7 loads manure to 1920 corn, 6, 12.
15. Cutting spring wheat, 5, 20; plowing corn, 15, 30.
16. Cutting spring wheat, 10, 40; shocking spring wheat, 20.
17. Cutting spring wheat, 15, 60; shocking spring wheat, 20.
18. Cutting spring wheat, 20, 80; shocking spring wheat, 20.
19. Cutting spring wheat, 20, 80; shocking spring wheat, 20.
21. Cutting oats, 14, 56; helping neighbor cut corn, 6, 24; shocking oats, 14.
22. Shocking oats, 10; shocking spring wheat, 10; helping neighbor cut corn, 12, 48.
23. Helping neighbor shell corn, 30, 40.
24. Helping neighbor stack grain, 30.
25. Mowing alfalfa, 20, 40; raking, 10, 20.
26. Stacking alfalfa, 25, 35; helping neighbor shell corn, 5, 10.
28. Stacking alfalfa, 25, 25; hauling alfalfa to barn, 20, 20.
29. Hauling alfalfa to barn, 20, 20; mowing alfalfa, 16, 32.
30. Stacking alfalfa, 20, 20; vaccinating beef cattle, 16, 8.
31. Hauling hogs to town, 3, 6; repairing harness and mower, 4, 8. Paid: veterinary fee for horses, \$10; hired labor for July, \$112.50. Received check for milk and butter, \$255.59.

Feeds set aside during July: Horses, 5 T. 1919 alfalfa, \$100. Dairy cows, 4 T. 1919 alfalfa, \$8c. Bought: 100 bu. oats for horses, \$70. Transferred 400 bu. to Hogs from Beef Cattle, \$600.

Total chores on beef cattle for month estimated at 5 hours and total chores on hogs, 3 hours.

August

Daily Chores: Dairy cattle, 4; horses, 2.

1. Hauling fence, 2, 4 (Real Estate); hauling salt for beef cattle from town, 2, 4. Paid for repair of harness, \$38.45.
2. Hauling cobs for fuel, 8, 8 (Labor); stacking alfalfa, 25, 25.
4. Driving beef cattle, 5, 5; hauling 10 loads manure to 1920 corn, 15, 30; helping neighbor thresh wheat, 10, 20.
5. Hauling 12 loads manure to 1920 corn, 20, 30; helping neighbor thresh, 10, 20.
6. Hauling 12 loads manure to 1920 corn, 20, 30. Received insurance on 2 dead steers, \$100.
7. Helping neighbor thresh, 5, 10; hauling 11 loads manure to 1920 corn, 20, 30.
8. Hauling 12 loads manure to 1920 corn, 20, 30; washing Ford car, 2; hauling veal to town, 2, 4 (Dairy Cattle). Sold veal calf, \$13.95 (Dairy).
9. Hauling 10 loads manure for 1920 corn, 20, 30; hauling coal for threshing, 4, 8 (Spring Wheat); bringing binder from field, 3, 3 (Spring Wheat).
10. Paid for gasoline and repairs on Ford car, \$58.38.
11. Hauling 10 loads manure for 1920 corn, 20, 30.
12. Hauling 12 loads manure for 1920 corn, 20, 30.
13. Hauling 11 loads manure for 1920 corn, 20, 30.
14. Hauling 12 loads manure for 1920 corn, 20, 30.
15. Hauling 12 loads manure for 1920 corn, 20, 30.
16. Hauling 6 loads manure for 1920 corn, 10, 15; helping neighbor thresh, 5, 10; hauling straw to dairy cattle, 4, 4.
17. Transferred 690 bu. oats to horses, \$483 (credit Supplies).
18. Helping neighbors thresh, 10, 20.
19. Threshing spring wheat, 60, 120; threshing winter wheat, 12, 24; threshing oats, 24, 48. Received for 1918 corncobs, \$10.
20. Threshing spring wheat, 60, 120.
21. Hauling spring wheat to market, 5, 10; mowing alfalfa, 20, 40. Sold 412 bu. spring wheat, \$783.13. Charge: Winter Wheat

- board for threshers, \$5; Spring Wheat board for threshers, \$15; Oats board for threshers, \$5.
22. Hauling spring wheat to market, 15, 30; mowing alfalfa, 10, 20; raking alfalfa, 5, 10.
 23. Hauling alfalfa, 20, 40; raking alfalfa, 5, 10.
 25. Hauling alfalfa, 20, 40; cutting weeds (charge Real Estate), 8, 16.
 26. Hauling alfalfa, 20, 40.
 28. Mowing alfalfa, 5, 10; mowing pasture, 8, 16 (Real Estate); fencing 4, 8 (Real Estate).
 29. Mowing alfalfa, 10, 20; raking alfalfa, 5, 10; mowing pasture, 10, 20 (Real Estate); snapping corn, 5, 10.
 30. Mowing alfalfa, 10, 20; raking alfalfa, 5, 10; fencing, 4, 8.
 31. Received check for milk and butter, \$144.61. Paid hired help for August, \$110.

Feeds set aside during August: Horses, 6 T. 1919 alfalfa, \$160. Dairy cows, 8 T. 1919 alfalfa, \$160.

Total chores in August on hogs, 11 hours; total chores on beef cattle, 4 hours.

September

Daily chores: Dairy cattle, 4; horses, 2.

1. Mowing alfalfa, 10, 20; raking alfalfa, 5, 10. Paid for equipment repairs, \$18.15.
2. Stacking alfalfa, 4, 8; helping neighbor haul hogs, 16, 32.
3. Grading around buildings, 10, 10 (Real Estate).
4. Helping neighbor fill silo, 20, 40.
5. Helping neighbor fill silo, 20, 40.
6. Stacking alfalfa, 40, 40.
8. Stacking and hauling alfalfa, 26, 40.
9. Gasoline and repairs on Ford car, \$40.13.
10. Trip to Sioux City, 10 (Beef Cattle); helping neighbor fill silo, 10, 20; working on tractor, 2. Paid shipping expenses on steers, \$53.96. Sold 27 steers, 14,580 lb., \$838.35.
11. Helping neighbor fill silo, 20, 20.
12. Hauling alfalfa, 6, 12; plowing for 1920 corn, 8, 8 (tractor); gathering seed corn, 4 (1919 Corn); getting corn binder, 2, 6 (1919 Corn).
13. Cutting corn and shocking, 22, 18.
15. Cutting corn and shocking, 14, 9.
16. Shocking and picking up corn, 20, 10.

17. Plowing for 1920 corn, 18, 36, 9 (tractor).
18. Plowing for 1920 corn, 10, 40.
19. Plowing for 1920 corn, 18, 36, 9 (tractor).
20. Plowing for 1920 corn, 11, 20, 6 (tractor); picking up corn, 10, 10.
22. Plowing for 1920 corn, 10, 36, 1 (tractor); working on tractor, 6.
23. Plowing for 1920 corn, 10, 40.
24. Plowing for 1920 corn, 14, 40, 4 (tractor).
25. Plowing for 1920 corn, 15, 40, 5 (tractor).
26. Plowing for 1920 corn, 15, 40, 5 (tractor).
27. Hauling hay for beef cattle, 8, 16.
28. Herding beef cattle, 5, 5.
29. Hauling hay to beef cattle, 8, 16; helping neighbor haul sand and cement, 10, 20.
30. Grading around building, 5, 10; repairing fences, 8 (Real Estate). Received check for milk and butter, \$116.49. Paid hired help for September, \$80.

Feeds set aside during September: Dairy cattle, 50 bu. 1919 corn, \$50; 4 T. 1919 alfalfa, \$80. Beef cattle, 3 T. 1919 alfalfa, \$60. Horses, 3 T. 1919 alfalfa, \$60. Transferred 10 bu. corn from Dairy to Beef Cattle, \$10.

Chores for month on beef cattle estimated at 15 hours; on hogs, 9 hours.

October

Daily Chores: Dairy cattle, 4; horses, 2.

1. Snapping corn, 3, 6; grading around building, 9, 18 (Real Estate).
2. Plowing for 1920 corn, 10, 40.
3. Plowing for 1920 corn, 10, 40.
4. Plowing for 1920 corn, 10, 40.
7. Snapping corn, 8, 16.
8. Snapping corn, 4, 8; repairs for equipment, \$18.35.
9. Snapping corn, 2, 4; plowing for 1920 corn, 8, 32.
10. Plowing for 1920 corn, 5, 20; hauling hay for beef cattle, 4, 8; going to town for repairs on plow, 3.
11. Snapping corn, 2, 2; plowing for 1920 corn, 10, 20; dehorning beef cattle, 5. Paid for dehorning beef cattle, \$12.75.
13. Snapping corn, 3, 6; plowing for 1920 corn, 4, 16.
14. Plowing for 1920 corn, 9, 36; hauling coal, 3, 6 (Personal). Received for steer killed by railroad, \$38. Repairs for equipment, \$3.80.

15. Snapping corn, 4, 8; plowing for 1920 corn, 5, 20; hauling hay for beef cattle, 4, 8. Received check for milk and butter, \$60.89.
 16. Hauling straw for beef cattle, 3, 6; hauling straw to horses, 4, 4.
 17. Snapping corn, 3, 6; picking corn, 4, 8; working on wagons, 3; repairing corncribs, 4 (Real Estate).
 18. Snapping corn, 5, 10; picking corn, 4, 8; hauling hay to beef cattle, 10, 10.
 20. Picking corn, 5, 10; driving hogs from town, 12. Sold apples from orchard, \$150 (credit Real Estate).
 21. Picking corn, 17, 32; vaccinating hogs, 8; helping neighbor thresh, 4. Bought 122 hogs, 17 640 lb., \$2850.15. Paid miscellaneous and shipping expenses on hogs, \$110.53; vaccinating hogs, \$134.90.
 22. Picking corn, 28, 56; repairing corncribs, 4; helping neighbor thresh, 5.
 23. Picking corn, 22, 42; helping neighbors thresh, 14, 14.
 24. Picking corn, 9, 18; hauling winter wheat to market, 4, 8.
 25. Picking corn, 25, 40; breaking colt, 2, 2.
 27. Picking corn, 29, 58; poll tax, 8, 16 (Personal). Two dead steers transferred to Hogs, \$30. Sold 1 steer hide, \$10.
 28. Picking corn, 24, 48; hauling winter wheat to market, 8, 16. Sold 171 $\frac{3}{4}$ bu. winter wheat, \$396.26.
 29. Picking corn, 30, 60; hauling spring wheat to market, 8, 16. Sold 95 $\frac{1}{4}$ bu. spring wheat, \$204.74.
 30. Picking corn, 31, 62.
 31. Picking corn, 38, 76. Paid: hired labor for October, \$73; gasoline, repairs, and expenses on Ford, \$34.80.
- Feeds set aside during October: Beef cattle, 540 bu. 1919 corn, \$540; 12 $\frac{3}{4}$ T. 1919 alfalfa, \$255. Dairy cattle, 60 bu. 1919 corn, \$60.*
- Chores for month for beef cattle estimated at 8 hours; for hogs, 8 hours.

November

Daily Chores: Beef cattle, 1 $\frac{1}{2}$, 2; dairy cattle, 4; hogs, 1; horses, 2 $\frac{1}{2}$.

1. Hauling hay to beef cattle, 15, 20; hauling coal, 8, 16 (Personal); picking corn, 15, 30.
3. Transferred 2 $\frac{1}{2}$ bu. oats from Horses to Labor, \$1.75. Picking corn, 15, 30; snapping corn, 16, 32.
4. Picking corn, 20, 40; snapping corn, 16, 32.

5. Snapping corn, 20, 40; picking corn, 20, 40.
6. Picking corn, 15, 30; snapping corn, 20, 40.
7. Picking corn, 20, 40; snapping corn, 18, 36.
8. Picking corn, 15, 30; snapping corn, 15, 30; hauling coal, 5, 10 (Personal). Borrowed from G. J. S., \$500. Credit Pasture and charge Horses, \$120; credit Pasture and charge Dairy Cattle, \$120; charge Beef Cattle, \$400 for hired pasture.
10. Hauling coal, 4, 2 (Personal).
11. Covering tanks, 10, 10 (Real Estate); picking corn, 5, 10.
12. Hauling hay and bedding for beef cattle, 16, 16; hauling wood, 2, 4 (Labor).
13. Hauling hogs to market, 2, 4; hauling hay and bedding for beef cattle, 12, 12. Sold hog, \$22.50.
14. Picking corn, 5, 10; hauling hay and bedding for beef cattle, 10, 10; sawing wood 10 (Labor).
15. Picking corn, 10, 20; snapping corn, 15, 20; repairing corn-cribs, 4; hauling cinders for hogs, 5, 10. Paid threshing expenses on spring wheat, \$108.35. Received check for milk and butter, \$108.30. Bought clover seed for new seeding on spring wheat, \$27. Paid threshing expenses: on winter wheat, \$26.45; on oats, \$42.45.
17. Snapping corn, 15, 30; picking corn, 10, 20.
18. Picking corn, 10, 20; snapping corn, 20, 40.
19. Picking corn, 10, 20; snapping corn, 18, 36.
20. Picking corn, 15, 30; snapping corn, 15, 30.
21. Picking corn, 20, 40; snapping corn, 8, 16.
22. Picking corn, 18, 36; snapping corn, 15, 20.
24. Picking corn, 20, 40; snapping corn, 8, 16.
25. Picking corn, 20, 40; snapping corn, 8, 16.
26. Picking corn, 10, 20; snapping corn, 4, 8; hauling bedding for beef cattle, 3, 6.
28. Hauling hay for beef cattle, 4, 4; covering tanks and well, 4, 4 (Real Estate); hauling sweet clover for horses, 4, 4.
29. Hauling coal, 4, 6 (Personal).
30. Paid: hired help for November, \$80; for contract corn picking, \$256.59 (1919 Corn).

Feeds set aside during November: Beef cattle, 1328 bu. 1919 corn, \$1328; 8½ T. 1919 alfalfa, \$168. Dairy cattle, 49 bu. 1919 corn, \$49. Horses, 79 bu. 1919 corn, \$79; 2 T. 1919 alfalfa and sweet clover, \$25.

December

- Daily Chores:* Beef cattle, 3 $\frac{1}{2}$, 4; dairy cattle, 4 $\frac{1}{2}$; hogs, 1 $\frac{1}{2}$; horses, 2 $\frac{1}{2}$.
2. Hauling hay for beef cattle, 6, 10; hauling hay for dairy cattle, 3, 6.
 3. Hauling bedding for beef cattle, 4, 8.
 4. Hauling sweet clover for horses, 6, 12.
 5. Hauling hay for beef cattle, 6, 12.
 6. Transferred 83 gal. gasoline from Auto to Dairy Cattle, \$20.85. Paid for board of corn pickers, \$34.80 (charge 1919 Corn). Transferred gasoline from Auto to Personal, \$31.25. Bought new elevator and equipment, \$412.25.
 7. Hauling hay for dairy cattle, 24, 32.
 8. Hauling bedding for dairy cattle, 4, 8; hauling hay for horses, 8, 16. Transferred 30 bu. corn from Beef Cattle to Dairy Cattle, \$30.
 9. Hauling wood, 4, 8 (Labor); bedding hog sheds, 3, 6.
 10. Hauling bedding for dairy cattle, 4, 4; hauling bedding for horses, 4, 4; sawing wood, 4 (Labor).
 11. Hauling hay for dairy cattle, 6, 12; hauling hay for horses, 6, 12.
 12. Working on water system for hogs, 8, 3 (Real Estate). Paid for corn picking, \$10.68 (1919 Corn).
 13. Hauling wood to house, 4, 8 (Labor); hauling bedding for beef cattle, 5, 8.
 15. Hauling hay for horses, 6, 12; hauling hay for beef cattle, 12, 12. Check for milk and butter, \$95.28.
 16. Cutting wood, 7 (Labor); taking disks to blacksmith, 3, 6.
 17. Cutting wood, 3 (Labor).
 18. Hauling hay for horses, 3, 6; working on tractor, 4; working on wagons, 3; bedding hog sheds, 2, 4.
 19. Shelling corn, 45, 60.
 20. Shelling corn, 104, 160. Paid: for shelling corn, \$53.75; 2 doz. husking mittens, \$5.50 (Corn).
 22. Hauling hay for horses, 10, 10; hauling cobs (Labor), 10, 10; helping neighbor haul corn, 5, 10.
 23. Hauling cobs to house, 4, 8 (Labor); hauling cobs, 4, 8 (Personal); helping neighbor shred corn, 10, 20.
 24. Hauling hay for horses, 4, 4; hauling cobs to house, 7, 10 (Personal); hauling cobs, 7, 10 (Labor).
 26. Hauling hay for beef cattle, 8, 8; hauling cinders to barn, 4, 8.

27. Snapping corn, 7, 7; getting boar, 5, 10.
29. Hauling calf to town, 4, 8 (Dairy Cattle); grinding feed for dairy, 6, 2, 3 (tractor); hauling corn to hogs, 2, 4; hauling cinders to hogs, 3, 6; changing hogs about, 3, 4; hauling sweet clover to horses, 3, 6.
30. Cutting wood, 26 (Labor); hauling wood, 5, 10 (Labor).
31. Hauling hay to horses, 4, 4. Paid hired help for December, \$79; for gasoline and repairs for Ford car, \$25.15. Sold veal calf from dairy cattle, \$12.50. Expenses for tractor October, November, December, \$190.21.

Feeds set aside during December: Beef cattle, 800 bu. 1919 corn, \$1000; 9 T. 1919 alfalfa, \$180. Horses, 35 T. 1919 alfalfa and sweet clover, \$300. Dairy cattle, 63 bu. 1919 corn, \$69; 11 T. 1919 alfalfa, \$220.

January

Daily Chores: Beef cattle, 2, 2; dairy cattle, 5; horses, 3; hogs, 2.

1. Sawing wood (Labor), 6, 2 (tractor). Transferred: 50 bu. oats from Horses to Dairy Cattle, \$35; 42 gal. gasoline from Auto to Labor, \$10.40. Paid: Farm Bureau membership (Real Estate), \$10; farm taxes, \$225. Bought posts and wire (Real Estate), \$150.
2. Hauling corn fodder, 16, 16 (1919 Corn).
3. Hauling corn fodder, 10, 10 (1919 Corn); hauling hay and bedding to beef cattle, 12, 12.
5. Hauling hay for horses, 4, 4.
6. Helping neighbor haul hogs, 5, 10; grinding corn for dairy cows, 2, 2 (tractor); hauling ashes to hogs, 2, 2; hauling wood, 3, 3 (Labor). Bought: salt for horses, \$3.85; salt for dairy cattle, \$3.85.
7. Grinding corn for dairy cows, 4, 2 (tractor). Cleaning ice house: 1, 1 (Dairy); 1, 1 (Labor); 1, 1 (Personal).
8. Sorting hogs, 8; hauling hogs to town, 40, 80. Paid note, \$500. Bought salt for beef cattle, \$6.85.
9. Taking hogs to market, 10; hauling hay to horses, 3, 6. Paid shipping expenses on hogs, \$66.85. Sold 54 hogs, 16,460 lb., \$2386.70.
10. Hauling and packing ice: 20, 40 (Dairy); 20, 40 (Personal); 20, 40 (Labor).
11. Packing ice, 5 (Dairy); 5 (Personal); 5 (Labor).
12. Hauling straw for ice house: 4, 4 (Dairy); 4, 4 (Personal); 4, 4 (Labor); hauling hay for horses, 2, 4. Paid expenses on Ford, \$63.57.

13. Hauling corn fodder, 3, 3 (Corn); husking fodder, 3 (Corn); hauling hay for beef cattle, 7, 10.
14. Helping neighbor haul straw, 10, 20; trip to see bull, 8 (Dairy).
15. Hauling hay to beef cattle, 8, 8; hauling wood, 12, 6 (Labor); hauling hay to horses, 4, 4.
16. Cutting wood (Labor), 6, 2 (tractor); grinding corn (Dairy), 12, 2 (tractor).
17. Driving beef cattle to town, 4, 4; hauling hogs to town, 2, 2. Sold 15 head of steers, 10,530 lb., \$952.20.
19. Hauling corn fodder, 4, 4; hauling hay for horses, 2, 4. Received interest on Liberty bond, \$2.31.
20. Husking corn fodder, 6; packing straw on ice, 1 (Personal); 1 (Labor); hiring man, 3 (Labor). Sold 1552 bu. 1919 corn, \$2017.80.
21. Hauling straw for dairy cattle, 6, 6. Sold steer hide, \$15.96.
22. Husking corn fodder, 8; going to buy dairy cow, 8. Bought 3 cows and 1 bull, \$1260 (Dairy). Paid freight and expense on cows and bull, \$18.36.
23. Husking corn fodder, 8.
24. Hauling hay to beef cattle, 8, 8; husking corn, 12.
26. Husking corn, 12.
27. Hauling corn fodder, 8, 8 (Corn).
28. Hauling hay to beef cattle, 2, 2.
29. Hauling corn fodder, 4, 4; hauling hay to horses, 3, 6; bringing home cows and bull, 8 (Dairy).
30. Hauling oats for Dairy 4, 8; husking corn fodder, 8 (Corn).
31. Skinning steer, 3; hauling hay for dairy cattle, 12, 12. Sold 50 steers, 44,150 lb., \$4525.37. Paid shipping expenses on steers, \$106.79; hired labor for January, \$97.50. Received check for milk and butter, \$304.77.

Transferred feeds: 713 bu. of corn, \$891.57, from steers to hogs; 25 bu. corn, \$31.24, from Beef Cattle to Dairy Cattle.

Feeds set aside during month as follows: Dairy cattle, 97 bu. 1919 corn, \$116.40; 7 tons 1919 alfalfa, \$140. Hogs, 135 bu. 1919 corn, \$162. Horses, 8 tons 1919 corn fodder, \$100. Credit steers with 4 tons of alfalfa, \$80, charge Alfalfa.

At the end of year make the following additional entries: Operator's labor for 12 months @ \$85; 730 qt. milk used in house (Personal) @ 7¢ per quart; 730 qt. milk used by labor @ 7¢ per quart; operator's board, \$20 per month.

Inventory: February 1, 1920

1919 Corn: 1250 bu. @ \$1.20.

Equipment: per list, \$2480.

Farm: 320 acres land @ \$300.

Hogs: 68 hogs, 11,900 lb. @ 14¢.

Horses: 11 work horses, \$1975; 7 colts, \$540; 220 bu. oats, \$182.60;
24 T. alfalfa and sweet clover, \$210; corn fodder, \$50.

Dairy Cattle: 15 milk cows, \$2378.36; 1 bull, \$400; 4 heifer calves, \$200; 1 yearling bull, \$40; 3 small heifer calves, \$100; 10 T. alfalfa, \$200.

Seasonal Work: New clover seeding (Spring Wheat), \$27; manure on 1920 corn land at cost; work on 1920 corn at cost; manure on 1919 corn at 40% of cost.

Ford Car: \$400.

Tractor and Equipment: \$526.50.

Financial

Cash in bank, \$10,679.14.

At the end of the year interest was charged to the various accounts and credited to Interest as follows: Beef Cattle, 6% on \$4000; Dairy Cattle, 6% on \$2600; Horses, 6% on \$2500; Hogs, 6% on \$1600; Oats, 6% on \$500 for 2 months; 1919 Corn, 6% on \$2000 for 6 months; 1918 Corn, 6% on \$5500 for 3 months; 1918 Alfalfa, 6% on \$500 for 4 months; 1919 Alfalfa, 6% on \$1000 for 6 months; Winter Wheat, 6% on \$200 for 6 months; Spring Wheat, 6% on \$800 for 8 months; Ford Car, 6% on \$500; Tractor, 6% on \$700; Equipment, 6% on \$2400; Real Estate, 6% on \$96,000.

Manure at \$1.50 a load was credited: 17 loads to Horses, 48 loads to Dairy Cattle, and 168 loads to Beef Cattle. The total cost of the manure put on the garden (including cost of hauling) was charged to Personal (see section 18), while 40% of the cost of the manure put on the 1919 Corn field was charged to 1919 Corn and the rest carried to the Inventory.

The following charges were made for the use of buildings and credited to Real Estate: Equipment, \$20; Personal, \$413; Dairy Cattle, \$213; Ford Car, \$20; Labor, \$105; Spring Wheat, \$22; Winter Wheat, \$3; Oats, \$20; 1918 Corn, \$20; 1919 Corn, \$60; 1919 Alfalfa, \$25; Horses, \$120; Beef Cattle, \$90; Hogs, \$50; Tractor, \$20.

Land was used for crops as follows: Corn, 106 acres; Spring Wheat, 80 acres; Alfalfa, 40 acres; Oats, 20 acres; Winter Wheat, 10 acres.

50 acres of less productive land were used for pasture, and the remaining 14 acres were used for roads, lanes, wood lot, orchard, and homestead. After Real Estate had been credited with the use of buildings, pasture charge, and apples sold from the orchard, the rest is charged as rent to the crops occupying 256 acres at a uniform rate per acre.

At the end of the year one half the net cost of the Ford car is charged to Personal and the other half to Loss and Gain.

MATERIAL FOR LABORATORY WORK IN COST ACCOUNTING

SET THREE

The following are summarized inventories and complete transactions on a 200-acre irrigated farm in Gallatin County, Montana. The farm is level, practically all tillable, and is located $3\frac{1}{2}$ miles from a town of 6000 inhabitants.

The following accounts are to be kept, allowing two opposite pages to each one unless otherwise specified: Auto, Barley ($\frac{1}{2}$ of two pages), Bills Payable ($\frac{1}{2}$), Bills Receivable ($\frac{1}{2}$), Buildings ($\frac{1}{2}$), Cattle ($\frac{1}{2}$), Equipment, General Farm ($\frac{1}{2}$), 1920 Hay ($\frac{1}{2}$), 1921 Hay ($\frac{1}{2}$), Hogs, ($\frac{1}{2}$), Horses ($\frac{1}{2}$), Interest, Inventory, Labor (4 consecutive pages), Land, Loss and Gain, New House, Oats ($\frac{1}{2}$), Pasture ($\frac{1}{2}$), Peas ($\frac{1}{2}$), Personal ($\frac{1}{2}$), Poultry ($\frac{1}{2}$), Supplies (4 consecutive pages), Suspense Accounts with Threshing and with Twine ($\frac{1}{2}$ each), Wheat ($\frac{1}{2}$).

Labor records are to be kept as follows, allowing one page for each except as specified: Barley, Buildings, Cattle (2 pages), Equipment, Exchange Labor, Land, General Farm (2 pages), 1920 Hay, 1921 Hay, Hogs, Horses, Labor, Manure, New House, Oats, Outside Labor, Pasture, Peas (2 pages), Personal, Poultry, Supplies, Wheat.

Feed Records are kept for Cattle, Hogs, Horses, and Poultry. The Feed Record for Hogs is divided into two parts, one part containing items to be credited to Cattle (Dairy), and the other part containing items to be credited to Supplies. Allow one half page to each of these two records.

Separate records are to be kept with items used by Personal from Dairy, Poultry, and Supplies.

The Sales Record for Dairy requires four pages and the Sales Record for Poultry, two pages.

A Pasture Record is to be kept for Horses, Cattle, and Hogs. Use one page of labor record for these, giving each one column.

In this set of accounts pasture is charged to each animal group monthly according to prevailing rates for rented pasture (see section 85) and entered into the record monthly. All feed (except pasture) is to be credited to Supplies unless otherwise specified.

Inventory: March 1, 1920

Land: 200 acres @ \$223, \$44,600.

Buildings: Dwelling, new, unfinished, \$2100; dwelling, old, \$250; milk house, \$125; barn, \$500; machine shed, \$100; henhouse, \$125; granary, \$250.

Horses: 11 horses and 2 colts, \$1325.

Cattle: 17 dairy cows, \$1275; 1 dairy bull, \$100; 10 yearlings, \$250; 3 calves, \$37.50.

Hogs: 20 shoats avg. 140 lb., \$300; 3 sows, \$150; 8 pigs, \$16.

Poultry: 125 hens, \$187.30; 5 roosters, \$10.

Supplies: 150 bu. wheat at \$2.35, \$352.50; 600 bu. oats at \$3 cwt., \$720; 400 bu. barley at \$4.50 cwt., \$864; 1000 lb. potatoes at \$3 cwt., \$30; 8 T. alfalfa at \$30, \$240; 8 T. timothy at \$35, \$280; 12 T. clover at \$30, \$360. Total, \$2021.50.

Equipment: General, \$957; Ford Car, \$350.

Cash: \$780.

Bills Receivable: \$70.

Bills Payable: Mortgage, \$5200; pasture bill, \$77.50.

Diary of Farm Events from March 1, 1919, to February 28, 1920.

The events are listed in chronological order as they occurred from day to day and are in the form in which the farmer had them when he entered them in his books. The numbers of man-hours and horse-hours are given in each instance by means of two consecutive numbers with a comma between them. In every case, the man-hours are given first. In case the tractor is used, this is indicated by the word *tractor* in parenthesis. Thus, 6, 12 indicates 6 hours man-labor and 12 hours horse-labor, while 4, 4 (tractor) indicates 4 hours man-labor and 4 hours tractor-use. Six hours man-labor and no horse-labor is indicated by 6.

The time required daily for chores is given at the end of each month and is not changed during the month.

March

1. Bought: 3130 lb. corn (Supplies), \$86.20; material for repairing house, 50¢. Sold 4 lb. butter fat @ 50¢. Paid last year's pasture bill, \$77.50. Working on new house, 2; hauling corn for hogs, 4, 8.

2. Special work on cattle, 11.
3. Sold: 2 qt. cream, \$1; 24 lb. butter @ 70¢; 14 qt. cream @ 50¢. Bought hardware for new house, 73¢. Hauling coal for Personal, 4, 8; working on new house, 4.
4. Hauling hay for cattle, 4, 8; working on new house, 4.
5. Working on new house, 8.
6. Bought lumber for new house, \$250. Going to town for lumber for new house, 4, 8; hauling hay, 2, 4 (Cattle).
7. Hauling hay, 6, 12 (Cattle); sacking barley, 2 (Supplies).
8. Paid for fixtures for new house, 50¢. Hauling barley to town, 4, 8; working on new house, 3; hauling barley to town, 6, 12.
10. Sold 10,000 lb. barley, \$323.70. Bought fixtures for new home, \$3.05. Hauling barley to town, 5, 10; hauling hay, 2, 4 (Cattle).
11. Helping neighbor move, 9, 18.
12. Hauling hay, 4, 8 (Cattle).
13. Sold: 27 lb. butter @ 70¢; 15 qt. cream @ 50¢. Going to town on farm business, 6, 6 F. (This F indicates trip with Ford car.)
14. Hauling hay, 2, 4 (Cattle).
15. Hauling straw, 2, 4 (Cattle); hauling 5 loads manure, 5, 10 (Peas).
17. Bought paint for new house, \$15. Hauling 9 loads manure, 7, 14 (Peas); going to town on farm business, 4, 8; repairing pasture fence, 3, 0.
18. Hauling wood, 7, 14 (Personal).
19. Hauling hay, 2, 4 (Cattle); working on new house, 6.
20. Sold: 27 lb. butter @ 70¢; 15 qt. cream @ 50¢; 9 doz. eggs @ 40¢. Working on new house, 7; going to town on farm business, 5, 10.
21. Sold 4½ doz. eggs @ 40¢. Paid hired man, \$5.45. Hauling hay, 2, 4 (Cattle).
22. Bought varnish for new house, \$32.15. Hauling hay, 2, 4 (Cattle); working on new house, 5.
23. Hauling hay, 2, 4 (Cattle); working on new house, 4.
24. Sold 3½ lb. butter fat @ 50¢; going to town on farm business, 3, 6; working on new house, 9.
25. Hauling wood, 7, 14.
26. Hauling 6 loads manure, 6, 12 (Peas); working on new house, 6.
27. Sold: 13 qt. cream @ 50¢; 28 lb. butter @ 70¢; 14½ doz. eggs @ 40¢. Hauling 4 loads manure, 3, 6 (Peas); going to town: 1, 2 (Poultry); 3, 6 (Cattle).

28. Hauling hay, 4, 8 (Cattle).

29. Hauling hay: 2, 4 (Cattle); 1, 2 (Horses); digging cesspool, 5 (New House).

30. Digging cesspool, 4.

31. Bought corn, 1430 lb., \$44.90; lumber for new house, \$200. Sold 3 qt. cream @ 50¢. Hauling corn for hogs, 4, 8; chopping wood (Personal), 5.

Chores in March: Horses, 28; cattle, 125; hogs, 14; poultry, 15.

Feeds: Horses, 620 lb. rolled oats, \$20.21, 2000 lb. hay, \$40; pasture, \$10. Cattle, 11,000 lb. hay, \$192.50; pasture, \$15.50. Hogs, 3475 lb. ground corn, \$104.60; skim milk, 3100 lb., \$21.70. Poultry, wheat, 264 lb., \$7.52; barley, 248 lb., \$9.92; ground corn, 248 lb., \$7.46.

Farm Products used in house: 15 doz. eggs @ 40¢; 30 qt. milk @ 10¢; 30 pt. cream @ 20¢; 9 lb. butter @ 65¢; 5 chickens @ \$1; 50 lb. potatoes at \$3 per cwt.

April

1. Bought: corn, 1530 lb., \$48.20 (Supplies); salt for cattle, \$1.40. Paid on hired man's wages, \$6.58. Hauling corn for hogs, 2, 8; sawing wood, 2 (Personal); hauling hay, 2, 4 (Cattle).
2. Bought halter, \$1.45 (Horses). Hauling straw, 1, 2 (Horses); sawing wood, 1 (Personal); hauling coal, 4, 8 (Personal).
3. Paid for grinding feed, \$3.10 (Horses). Sold horse, \$75 (Kate). Bought harness, \$12. Sold: 13½ qt. cream @ 50¢; 28 lb. butter @ 70¢; 15 doz. eggs @ 40¢. Going to town: 2, 4 (Poultry); 5, 10 (Horses); 5, 10 (Cattle).
5. Working on new house, 4; picking rock (General Farm), 2, 4.
6. Paid hired man on wages, \$25.00. Picking rock, 2, 4; working on new house, 5.
7. Hauling 2 loads manure, 2, 4 (Peas); working on new house, 4.
8. Borrowed on note at bank 9 mo. 8%, \$1200. Bought paint for new house, \$2.75. Digging cesspool, 6 (New House).
9. Hauling hay: 1, 2 (Horses); 1, 2 (Cattle); taking potatoes out of pit, 4 (Personal).
10. Sold: 31 lb. butter @ 70¢; 18½ qt. cream @ 50¢; 15 doz. eggs @ 40¢. Bought varnish, \$8 (New House). Digging cesspool, 6 (New House). Going to town: 3, 6 (Cattle); 1, 2 (Poultry).
12. Sold cow, \$85. Paid: for sharpening plow shares, \$2.75; hired man, \$2; interest on mortgage, \$312; on mortgage, \$1000 (Bills

- Payable). Sold eggs for hatching, \$1.70. Taking cow to town, 3, 3; working on new house, 8, 10.
13. Hauling hay, 1, 2 (Cattle); 1, 2 (Horses); working on new house, 8, 6.
 14. Working on new house, 14.
 15. Sold: 14 doz. eggs @ 35¢; 4 qt. cream @ 50¢. Bought paint, \$65 (New House). Paid wages to hired man, \$59. Picking rock, 2, 4; working on new house, 5.
 16. Picking rock, 2, 6; sowing grass seed in meadow, 2; building fence, 3 (Land).
 17. Sold: cream, 13½ qt. @ 50¢; 32 lb. butter @ 70¢; 18 hogs, 2975 lb. @ 14¢. Marketing hogs, 10, 10; taking cream and butter to town, 4, 8.
 19. Hauling hay, 2, 4 (Cattle); working on new house, 5.
 20. Repairing mangers in horse barn, 2.
 21. Working on new house, 4.
 22. Sold: 15 doz. eggs @ 33¢; 5 qt. cream @ 50¢. Paid painter, \$50 (New House). Going to town with eggs, 4, 8; working on new house, 4.
 23. Cleaning seed wheat, 6. Charge Wheat and credit Supplies, 29½ bu. seed wheat @ \$2.35.
 24. Sold: 24 lb. butter @ 70¢; 12½ qt. cream @ 50¢; 2 doz. eggs @ 40¢. Irrigation assessment, \$5 (General Farm). Paint, \$4.20 (New House). Going to town with butter and cream, 4, 8.
 26. Picking rock, 6, 12.
 27. Picking rock, 3, 6; working on new house, 4.
 28. Bought pads for horses, \$4.50 (Equipment). Sold 4 qt. cream @ 50¢. Bought: meat for hired man, \$1 (Labor); potatoes for hired man, \$3. Working on new house, 9, 6.
 29. Hauling hay: 1½, 3 (Cattle); 1½, 3 (Horses).
 30. Working on new house, 5.

Chores in April: Horses, 23; cattle, 90; hogs, 7; poultry, 13.

Feeds: Horses, 1500 lb. rolled oats, \$48.90; ½ T. hay, \$20, pasture, \$8.25. Cattle, 7 T. hay, \$245. Hogs, 1800 lb. ground corn, \$54.18; 1700 lb. skim milk, \$11.90. Poultry, 270 lb. wheat, \$7.69; 240 lb. barley, \$9.60; 240 lb. ground corn, \$9.86.

Farm products used in house: 15 doz. eggs @ 40¢; 7½ gal. milk @ 30¢; 15 pt. cream @ 20¢; 9 lb. butter @ 65¢; 5 chickens @ \$1; 40 lb. potatoes @ 6¢.

May

1. Sold: 21 lb. butter @ 70¢; 14 qt. cream @ 50¢; 18½ doz. eggs @ 40¢. Going to town: 3, 6 (Cattle); 2, 4 (Poultry).
3. Bought: seed peas, \$240.94 (Peas); horse feed, \$1.00 (Supplies). Sold seed wheat, 950 lb. @ 5¢ (credit Supplies). Working on new house, 6.
4. Working on new house, 6.
5. Cleaning up stack bottom, 6 (General Farm).
6. Bought: fixtures for new house, \$51.80; paint, \$20.75 (New House). Sold 15 doz. eggs @ 35¢. Paid wages, \$2.00. Picking rock, 3, 6; going to town on farm business, 4, 8 (General Farm); cleaning up stack bottom, 4.
7. Paid for grinding horse feed, \$3.45. Going to town for feed, 5, 10; burning stack bottom, 5.
8. Bought bolts and grease, \$2.10. Sold: 23 lb. butter @ 70¢; 17 qt. cream @ 50¢; 23½ doz. eggs, \$9.05. Paid painter (New House), \$75. Disking for wheat, 10, 40; going to town: 2, 2 F (Cattle); 1, 1 F (Poultry).
9. Disking wheat, 5, 20.
10. Plowing for peas, 8, 26; taking painter to town, 3, 6 (New House). Charge Oats and credit Supplies, 2200 lb. seed oats at \$3, per 100 lb.
11. Cleaning seed wheat, 6, 0.
12. Sold: 15 doz. eggs @ 40¢; 4½ qt. cream @ 50¢. Bought plow repairs, \$1.20. Paid hired man, \$30. Going to town: 2, 4 (Cattle); 2, 4 (Poultry); plowing for peas, 8, 26.
13. Plowing for peas, 7, 56.
14. Potatoes to hired man, 80 lb. @ 4½¢ (credit Supplies). Plowing for peas, 16, 64.
15. Paid irrigation assessment, \$20.85. Sold: 21 lb. butter @ 70¢; 12 qt. cream @ 50¢; 2 doz. eggs @ 40¢. Going to town: 2, 2 F (Cattle); 1, 1 F (Poultry). Dragging roads, 1, 4 (Outside Labor); diskings wheat, 4, 16; harrowing peas, 7, 28.
16. Hauling hay for cattle, 1, 2; diskings wheat, 7, 56.
17. Paid hired man, \$60. Diskings wheat, 7, 56.
18. Bought grass seed, \$87.30. Sold 2 lb. butter, \$1.40. Leveling wheat, 4, 16; seeding wheat, 6, 24; plowing peas, 4, 16; going to town for grass seed, 2, 2 F.
19. Seeding wheat, 7, 28; plowing peas, 4, 16; harrowing peas, 4, 16.

20. Plowing oats, 4, 28; disking oats, 2, 8; leveling oats, 1, 4; drilling oats, 2, 8.
 21. Plowing oats, 3, 12; disking oats, 6, 24; harrowing oats, 4, 16.
 22. Going to town, 2, 2 F (Cattle); disking oats, 4, 16; drilling oats, 4, 16; leveling oats, 4, 16.
 23. Sold: 26 lb. butter @ 70¢; 13½ qt. cream @ 50¢. Paid hired man, \$4.50. Bought repairs for plowshares, \$2.10. Charge Barley and credit Supplies, 825 lb. seed barley, \$37.12.
 24. Sold: 280 lb. potatoes @ 8¢; 2400 lb. seed oats, \$86.40 (Supplies). Harrowing wheat, 4, 16; plowing barley, 8, 36; hauling hay for horses, 2, 4.
 25. Plowing garden, 3, 6 (Personal); dragging road, 2, 8 (Outside Labor).
 26. Paid hired man, \$25.50. Disking peas, 9, 36; plowing barley, 9, 45.
 27. Plowing barley, 4, 20; disking barley, 14, 61.
 28. Sold 2 T. hay, \$40 (Supplies). Sharpening plowshares, \$1.50; harrowing barley, 4, 16; disking peas, 4, 20; leveling peas, 4, 16; going to town for peas, 4, 16.
 29. Sold: 27 lb. butter @ 60¢; 10 qt. cream @ 50¢; 17 doz. eggs @ 40¢. Plowing oats, 8, 56. Going to town: 2, 2 F (Cattle); 1, 1 F (Poultry).
 30. Paid hired man's wages, \$25.75. Hauling hay for horses, 2, 4.
 31. Cleaning seed: 3 (Barley); 2 (Oats).
- Chores in May:* Horses, 85; cattle, 30; poultry, 30; hogs, 4.
- Feeds:* Horses, 750 lb. rolled oats, \$24.45; 1000 lb. gr. barley, \$42.60; 2 T. hay, \$90; pasture, \$10.75. Cattle, 4 T. hay, \$170; pasture, \$21. Hogs, 200 lb. corn, \$6.02; 3100 lb. skim milk, \$21.70.
- Farm products used in house:* 20 doz. eggs @ 40¢; 7½ gal. milk @ 30¢; 30 pt. cream @ 20¢; 12 lb. butter @ 50¢; 5 chickens @ \$1.00; 40 lb. potatoes @ 8½¢.

June

1. Plowing peas, 3, 12; hauling hay for horses, 2, 4.
2. Drilling peas, 7, 21; plowing peas, 8, 40.
3. Drilling peas, 4, 8; harrowing peas, 4, 16.
4. Drilling peas, 4, 12; disking peas, 5, 20; harrowing oats, 3, 12; dragging road, 2, 8 (Outside Labor).
5. Paid: hired man, \$10; auto tire, \$24.75; varnish, \$4.70 (New House); grass seed, \$4.30. Sold butter, 38 lb., \$21.30. Running ditches, 2, 4 (Hay); hauling manure for dams in meadow, 3, 6;

- going to town for pea seed, 3, 6; going to town with butter, 2, 2 F; eggs, 1, 1 F.
6. Harrowing peas, 6, 24; disking oats, 4, 16.
 7. Disking oats, 9, 36; harrowing peas, 3, 12; drilling peas, 3, 12; dragging roads, 1, 4 (Outside Labor).
 8. Drilling oats, 6, 24; disking oats, 5, 20.
 9. Bought grass seed, \$30.40. Paid hired man's wages, \$4.65. Sold 25 lb. butter @ 55¢. Drilling barley, 3, 12; drilling oats, 1, 4.
 10. Drilling barley, 2, 8; repairing head gate, 5 (General Farm).
 11. Paid car expense, \$5. Sold: 15 doz. eggs @ 40¢; 100 lb. potatoes, \$7. Going to town for hired man, 3, 3 F.
 12. Bought gasoline for car, \$1.60. Sold: 32 lb. butter @ 55¢; 15 qt. cream @ 50¢. Going to town, 3, 3 F (Cattle); hauling manure for dams in meadows, 4, 8; planting potatoes in garden, 3 (Personal).
 13. Plowing garden, 2, 4.
 14. Planting potatoes, 5 (Personal).
 15. Sold: cream, \$4.05; 50 lb. potatoes, \$5.45. Ditching hay meadow, 8, 16; irrigating meadow, 5.
 16. Ditching meadow, 8, 16; irrigating meadow, 5.
 17. Paid hired man's wages, \$16. Sold 5 doz. eggs @ 40¢. Ditching meadow, 5, 10; irrigating meadow, 7.
 18. Irrigating meadow, 3; working on new house, 5.
 19. Sold: 14 doz. eggs @ 40¢; 16 qt. cream @ 50¢; 30 lb. butter @ 55¢. Going to town: 2, 2 F (Cattle); 1, 1 F (Poultry). Working on new house, 5.
 20. Sold 17½ qt. cream @ 50¢. Working on new house, 15.
 21. Sold: 7½ doz. eggs @ 40¢; 75 lb. potatoes @ 5¢; 12½ lb. ham @ 38¢ (Supplies). Bought hardware, \$2.15 (New House). Going to town, 3, 6 (New House); dragging roads, 1½, 6 (Outside Labor).
 22. Irrigating hay, 3; going to town, 3, 3 F (General Farm); setting telephone poles, 8 (General Farm).
 23. Paid: hired man, \$32.50; lumber for new house, \$13.65. Ditching meadow, 7, 14; going to town, 2 (New House).
 24. Paid car repairs, \$11.20. Sold cream, \$19.40. Putting in dams, 6, 6 (Land); cleaning out barn: 1 (Cattle); 1 (Horses).
 25. Repairing pasture fence, 3; going to town, 2, 2 F (Cattle); miscellaneous, 3, 3 F (General Farm).

26. Sold: 20 lb. butter @ 55¢; 14 qt. cream @ 50¢. Repairing pasture fence, 6.
27. Bought gasoline for car, \$2.70.
28. Sold: 13½ lb. lard @ 25¢; 30 lb. potatoes @ 5¢. Ditching wheat, 2, 2; ditching peas, 2, 2; dragging roads, 1½, 6 (Outside Labor); harrowing garden, 1, 2; cleaning head ditch, 4.
29. Ditching wheat, 2, 2; ditching peas, 2, 2.
30. Repairing pasture fence, 4; weeding garden, 4.

Chores in June: Horses, 21; cattle, 42; hogs, 26; poultry, 21.

Feeds: Horses, 540 lb. rolled oats, \$22.46; 1 T. hay, \$45; pasture, \$15.50. Cattle, 1½ T. hay, \$64.50; pasture, \$37. Hogs, 750 lb. barley, \$33.75; 2250 lb. milk (skim), \$15.75; pasture, \$6.00.

Farm products used in house: 17 doz. eggs @ 40¢; 28 qt. cream @ 40¢; 7 gal. milk @ 30¢; 14 lb. butter @ 50¢; 3 chickens @ \$1.00; 40 lb. potatoes @ 7¢.

July

1. Ditching peas, 3, 3; dragging roads, 2, 8 (Outside Labor); repairing pasture fence, 2; going to town, 2.
2. Weeding peas, 7, 14; working on new house, 7.
3. Sold: 33 lb. butter, @ 55¢; 16 qt. cream @ 50¢; 17 doz. eggs @ 40¢. Going to town: 2, 2 F (Cattle); 1, 1 F (Poultry). Weeding peas, 4, 8; tearing down old house, 4.
5. Working on private road, 3; tearing down old house, 3.
6. Sold cream, \$8.90. Bought screens for new house, \$8.50.
7. Sold calf, \$24.80. Paid Kruger for plumbing, \$250 (New House). Going to town, 1, 1 F (Cattle); tearing down old house, 6.
8. Sold two calves, \$46.80. Going to town, 3 (Cattle); working on new house, 8.
9. Working on new house, 6; repairing pasture fence, 2.
10. Sold: 14 qt. cream @ 50¢; 29 lb. butter @ 55¢; 14 doz. eggs @ 40¢. Bought repairs for mower, \$8.37. Going to town: 3, 3 F (Cattle, 2; Equipment, 1); fixing private road, 3; working on new house, 4.
11. Working on new house, 3.
12. Mowing hay, 8, 16; repairing mowers, 3.
13. Mowing hay, 16, 32.
14. Sold cream, \$10.60. Irrigating wheat, 2; mowing hay, 6, 12; working on ditch, 2; going to town for irrigators, 2, 2 F; cultivating potatoes, 2, 6.
15. Mowing hay, 3, 6; irrigating wheat, 13; working on ditch, 3.

16. Irrigating wheat, 19; raking hay, 8, 16.
 17. Bought mower repairs, \$2.80. Sold: 1 T. hay, \$37.80; cream, \$11.45; 36 lb. butter @ 55¢; 15 qt. cream @ 50¢; 10 doz. eggs @ 45¢. Irrigating wheat, 16. Going to town: 2, 2 F (Cattle); 1, 1 F (Poultry). Working on new house, 3.
 18. Irrigating peas, 20.
 19. Irrigating peas, 11; running ditches, 4, 4 (Oats); raking hay, 3, 6.
 20. Irrigating peas, 11; irrigating oats, 9; irrigating barley, 3; repairing stacker, 3.
 21. Paid Erwin on salary account, \$80. Irrigating oats, 10; going to town for man, 3, 3 F; repairing stacker, 3.
 22. Mowing hay, 17, 34; going to town for man, 2, 2 F.
 23. Paid Neuberry for labor, \$8.50; stacking hay, 32, 32.
 24. Sold: 30 lb. butter @ 55¢; 17½ qt. cream @ 50¢; cream to creamery, \$36.40. Paid: for repairs on mower, \$3.30. Raking hay, 3, 6; stacking hay, 9, 10; repairing stacker, 1. Going to town: 2, 2 F (Cattle); 1, 1 F (Poultry).
 26. Stacking hay, 12, 10; repairing mower, 4.
 27. Repairing mower, 6; mowing hay, 20, 40.
 28. Mowing hay, 10, 20; raking hay, 2, 4; stacking hay, 9, 12.
 29. Mowing hay, 6, 12; raking hay, 2, 4; stacking hay, 10, 20; going to town for man, 2, 2 F.
 30. Stacking hay, 16, 32.
 31. Sold: 39 lb. butter @ 60¢; 15 qt. cream @ 50¢; 11½ doz. eggs @ 50¢. Stacking hay, 9, 12; going to town, 2, 2 F (Cattle); 1, 1 F (Poultry).
- Chores in July:* Horses, 11; cattle, 72; hogs, 6; poultry, 4.
- Feeds:* Horses, 992 lb. ground oats and barley, \$41.27; 1860 lb. hay, \$41.85; pasture, \$16.75. Cattle, pasture, \$47.75. Hogs, 400 lb. barley, \$18.00; 6200 lb. skim milk, \$24.80; pasture, \$5.95. Poultry, 420 lb. ground oats and barley, \$18.52.

Farm products used in house: 17 doz. eggs @ 55¢; 28 qt. cream @ 35¢; 7 gal. milk @ 30¢; 14 lb. butter @ 50¢; 5 chickens @ \$1.00; 50 lb. potatoes @ 5¢.

August

1. Sold: 39 lb. butter @ 60¢; 21 qt. cream @ 50¢; 10½ doz. eggs @ 55¢. Stacking hay, 26, 28.
2. Stacking hay, 32, 40.

3. Mowing hay, 4, 8; stacking hay, 20, 20; going to town, 2, 2 F (General Farm).
4. Mowing hay, 16, 32; working in garden, 6.
5. Sold cream, \$10.05. Paid: hay help, \$12; mower repairs, \$3.60. Mowing hay, 14, 28.
6. Mowing hay, 6, 12; raking hay, 12, 24.
7. Bought gasoline, \$1.75.
8. Plowing in ditch, 4, 4 (Oats).
9. Sold: $3\frac{1}{2}$ doz. eggs @ 50¢; 1000 lb. oats, \$36.00. Stacking hay, 14, 28.
10. Paid: Budd for plumbing, \$600 (New House); Kruger for plumbing, \$24.50 (New House). Mowing weeds, 3, 6 (General Farm).
11. Cutting weeds, 11 (General Farm).
12. Plowing in ditches, pea field, 3, 3; stacking hay, 25, 25.
13. Mowing hay, 8, 16; stacking hay, 22, 14.
14. Stacking hay, 17, 15. Going to town: 2, 2 F (Cattle); 1, 1 F (Poultry).
15. Irrigating hay, 3.
16. Paid: Smelt for labor, \$104; Tweetters for labor, \$62. Bought lumber for head gate, \$3.80. Irrigating hay, 5.
17. Irrigating hay, 2.
18. Going to town for horse feed, 6, 12.
19. Hauling oats to town, 5, 10.
20. Hauling oats, 5, 10. Going to town: 2, 2 F (Cattle); 1, 1 F (Poultry).
21. Sold: 31 lb. butter @ 55¢; 15 qt. cream @ 50¢; sour cream, \$5.67; chickens, \$4.25. Going to town: 2, 2 F (Cattle); 1, 1 F (Poultry). Hauling oats, 5, 10.
23. Sold: cream, \$9.80; cow, \$84; 7820 lb. oats, \$254.15; 67 bu. wheat @ \$2.35. Going to town with wheat, 6, 12.
24. Irrigating pasture, 6; mowing weeds in pasture, 2, 4; plowing ditches in barley, 4, 4.
25. Cutting peas, 8, 16; bunching peas, 8; fencing hay stacks, 8, F (Pasture).
26. Cutting peas, 8, 16; bunching, 8.
28. Going to town: 3, 3 F (Cattle); 2, 2 F (Poultry).
30. Mowing peas, 10, 20; bunching, 16; filling in ditch, 4 (New House).
31. Sold: 39 lb. butter @ 55¢; 14 qt. cream @ 50¢; 8 doz. eggs @ 55¢. Paid: repairs on telephone line, \$15.00; mower repairs, \$4.90; spark plugs, \$5.00 (Ford). Bunching peas, 16.

Chores in August: Horses, 19; cattle, 121; hogs, 9; poultry, 7.

Feeds: Horses, 775 lb. ground oats and barley, \$20.61; 1½ T. hay, \$34.50; pasture, \$15.50. Cattle, 1 T. hay, \$19; pasture, \$43.25. Hogs, 400 lb. barley, \$10; 6200 lb. skim milk, \$24.80; pasture, \$5.95.

Farm products used in house: 20 doz. eggs @ 55¢; 28 qt. cream @ 30¢; 7 gal. milk @ 30¢; 14 lb. butter @ 55¢; 5 chickens @ \$1; 75 lb. potatoes, 94¢.

September

1. Bunching peas, 8; cutting oats, 4, 12; repairing binder, 4.
2. Paid for binder repairs, 70¢. Bunching peas, 16.
3. Bought binding twine, \$27.75 (enter in All Crop Account). Bunching peas, 16. Paid for gasoline, \$1.87.
4. Sold: 42 lb. butter @ 60¢; 15 qt. cream @ 50¢; 8 doz. eggs @ 55¢. Bunching peas, 9; cutting oats, 3, 9; shocking oats, 2; going to town, 3, 3 F (Cattle).
5. Cutting barley, 4, 12; shocking barley, 4; shocking oats, 7.
6. Mowing hay, 4, 8; filling ditch, 2 (New House).
7. Cutting barley, 5, 15; shocking barley, 4; mowing hay, 4, 8.
8. Cutting oats, 9, 29; shocking oats, 18.
9. Cutting wheat, 9, 27; shocking wheat, 18.
10. Cutting barley, 6, 18; mowing hay, 12, 24; going to town for binder repairs, 4, 4 F.
11. Sold: 35 lb. butter @ 60¢; 15 qt. cream @ 50¢; 12 doz. eggs @ 55¢. Cutting wheat, 5, 15; shocking wheat, 5; mowing hay, 6, 12; going to town, 3, 3 F (Cattle).
13. Cutting wheat, 2, 8; helping Hallford thresh, 10, 20 (Exchange Labor).
14. Shocking wheat, 9; shocking hay, 6; working in basement, 4 (New House).
15. Threshing peas, 92, 85; shocking hay, 4.
16. Shocking barley, 18.
17. Raking hay, 5, 10; stacking barley, 5, 10; helping Figgins thresh, 10.
18. Paid: Tweeters for labor, \$107.50; Smelt for labor, \$4.35; gasoline, \$1.80. Sold: 39 lb. butter @ 60¢; 16 qt. cream @ 50¢; 5 doz. eggs @ 55¢. Stacking hay, 9, 15; shocking wheat for Hoadly 7 (Exchange Labor); going to town, 3, 3 F (Cattle).
20. Stacking hay, 12, 20; shocking hay, 12, 20.
21. Mowing hay, 8, 16; stacking hay, 12, 20.
22. Helping Pease thresh, 24, 32 (Exchange Labor).

23. Hauling peas to town, 8, 16; helping Morgan thresh, 4, 20.
24. Helping Morgan thresh, 2, 4; working on basement, 12 (New House).
25. Sold: 47 lb. butter @ 60¢; 20 qt. cream @ 50¢; 15 doz. eggs @ 55¢. Fencing haystacks, 8. Going to town: 2, 2 F (Cattle); 1, 1 F (Poultry).
27. Cutting oats, 8, 32; shocking oats, 8.
28. Sold cow and calf, \$105. Cutting peas, 3, 6; mowing hay, 3, 6; hauling threshing coal, 8, 16.
29. Cutting peas, 6, 12; raking hay, 3, 6.
30. Going to town, 3 (General Farm); cleaning granary, 3; hauling threshing coal, 3; threshing wheat, 90, 110.

Chores in September: Horses, 20; cattle, 150; hogs, 5; poultry, 5.

Feeds: Horses, 900 lb. ground oats and barley, \$18.09; 1½ T. hay, \$24; pasture, \$12.55. Cattle, 1½ T. hay, \$21.00; pasture, \$24.50. Hogs, 1500 lb. barley, \$27.75; 3100 lb. skim milk, \$12.40; pasture, \$5.95. Poultry, 155 lb. oats, \$2.87; 480 lb. ground oats and barley, \$10.08.

Farm products used in house: 20 doz. eggs @ 55¢; 28 qt. cream @ 30¢; 7 gal. milk @ 30¢; 14 lb. butter @ 55¢; 5 chickens @ \$1; 75 lb. potatoes, 94¢.

October

1. Paid: Guven for threshing labor, \$5; Steven for threshing labor, \$10; Smith for threshing labor, \$5; Nebraska for threshing labor, \$5; Simpson for head-gate lumber, \$3.75 (Land). Threshing wheat, 30, 22; threshing barley, 41, 51.
2. Bought gasoline, \$1.87. Sold: 40 lb. butter @ 65¢; 20 qt. cream @ 50¢; 3 doz. eggs @ 55¢. Paid Smelt for labor, \$93.65. Threshing oats, 60, 75; helping Hoadly thresh, 12 (Exchange Labor).
3. Cutting peas, 4, 8; helping Figgins thresh, 8, 8 (Exchange Labor).
4. Cutting peas, 6, 12; raking hay, 4, 8; stacking hay, 4, 6.
5. Helping Figgins thresh, 20, 20 (Exchange Labor).
6. Helping Figgins thresh, 16, 32; helping Bond, 9, 18.
7. Helping Bond thresh, 4, 8; helping Halford thresh, 14, 28.
8. Bunching peas, 2; stacking hay, 14, 14.
9. Sold: 41 lb. butter @ 65¢; 14 qt. cream @ 50¢; 7 doz. eggs @ 55¢. Bought: gasoline and oil, \$4.13; chain for Ford, \$2.65. Paid: Pease for threshing, \$3.00; Johnson for threshing, \$49.35. Bunching peas, 13; going to town, 3, 3 F (Cattle).

11. Doing odd jobs, 3; digging potatoes, 5.
 12. Digging potatoes, 7.
 13. Digging potatoes, 8.
 14. Digging potatoes, 5; going to town, 3, 3 F (General Farm).
 15. Fencing haystacks, 16.
 16. Paid hired man, \$5. Sold: 46 lb. butter @ 65¢; 16 qt. cream @ 50¢; 4 doz. eggs @ 60¢. Bought gasoline, \$3.55. Fencing haystacks, 4; going to town, 3, 3 F (Cattle).
 18. Fencing haystacks, 4; helping Hansen thresh, 5, 10.
 19. Paid for threshing labor, \$8.40. Fencing haystacks, 4; helping Hansen thresh, 5, 10.
 20. Bought sacks, \$11.20. Helping Hansen thresh, 10, 20.
 21. Threshing oat, 11, 14.
 22. Fencing haystacks, 3; driving horses to pasture, 2.
 23. Going to town, 3, 3 F (Cattle).
 25. Hauling load of sand for new house, 6, 12; cleaning henhouse, 1, 2.
 26. Hauling sand, 6, 12 (New House). Sold wagon, \$15.
 27. Going to town, 3, 3 F (General Farm); helping Stucky thresh, 5, 10; threshing peas, 50, 20. Bought hay hooks, \$1.
 28. Helping Stucky thresh, 2. Paid Allen threshing labor, \$7.
 29. Repairing stalls in barn, 2; cleaning around straw stacks, 2 (General Farm).
 30. Paid threshing bill (wheat, \$72.26; peas, \$91.70; barley, \$26.45; oats, \$45.59). Bought gasoline, \$3.50. Sold: 44 lb. butter @ 65¢; 20½ qt. cream @ 50¢; 1 doz. eggs @ 70¢; 3 chickens, \$3.40. Going to town: 4, 4 F (Cattle); 1, 1 F (Poultry).
- Chôres in October:* Horses, 20; cattle, 150; hogs, 8; poultry, 8.
Feeds: Horses, 1050 lb. ground oats and barley, \$20.05; 2½ T. hay, \$32.89; pasture, \$9.00. Cattle, 1½ T. hay, \$21.00; pasture, \$25.50. Hogs, 620 lb. peas, \$3.10; 3100 lb. skim milk, \$12.40; pasture, \$3.80. Poultry, 310 lb. ground peas, \$1.55; 651 lb. wheat, \$11.39.
- Farm products used in house:* 15 doz. eggs @ 65¢; 10 gal. milk @ 30¢; 10 lb. butter @ 50¢; 2 chickens @ \$1.00; 40 lb. potatoes, 67¢.

November

1. Paid: threshing coal, \$56.00; lumber, \$171.06 (New House). Hauling straw for bedding for horses, 2, 2; going to town, 1, 1 F (General Farm); doing odd jobs, 4.
2. Hauling peas to town, 5, 10.

3. Sold: 3090 lb. oats, \$50.99; 550 lb. barley, \$9.63; 400 lb. potatoes, \$6.00. Bought gasoline, \$3.55. Hauling peas, 4, 8; going to town, 4, 4 F (General Farm).
 4. Sold: 123 lb. barley, \$2.15; 4 T. hay @ \$15. Hauling peas, 6, 12.
 5. Fencing haystacks, 4.
 6. Sold: 65 lb. butter @ 55¢; 16 qt. cream @ 50¢; 2 doz. eggs @ 85¢; 4 chickens, \$4.65; 105 lb. oats, \$1.73; 135 lb. barley, \$2.36. Bought gasoline, \$2.08. Going to town, 5, 5 F (General Farm).
 8. Going to town, 4, 4 F (General Farm).
 9. Going to town for load of coal, 4, 8 (Personal).
 10. Paid: Caven for cattle pasture for season, \$123; cement, \$12.50 (New House). Fencing haystacks, 4.
 11. Hauling hay for cows, 1, 2; working on cement in basement, 4 (New House).
 12. Hauling hay for cows, 1, 2; work in basement, 4 (New House).
 13. Sold: 35 lb. butter @ 65¢; 16 qt. cream @ 50¢. Received for peas, \$928.90. Paid for fire insurance for buildings, \$26.98. Going to town, 5, 5 F (General Farm).
 15. Going to town with load of barley to grind for hogs, 6, 12.
 16. Grinding oats and barley for hog feed, \$5.75; sacking feed, 2 (Hogs); hauling feed to town, 4, 8 (Hogs).
 17. Taking home borrowed stacker, 3, 6.
 18. Cement work in basement, 5 (New House).
 19. Cement work in basement, 5 (New House).
 20. Sold: 27 lb. butter @ 65¢; 11 qt. cream @ 50¢. Bought gasoline, \$2.49. Going to town, 5, 5 F (Cattle).
 22. Sold Alaska peas, \$419.15. Hauling 1 load of manure on hay meadow, 2, 4; hauling hay for horses, 2, 4.
 23. Paid taxes, \$335.15. Going to town, 4, 4 F (General Farm); hauling 2 loads manure on hay meadow, 3, 12.
 24. Hauling load of manure on hay meadow, 2, 4; going to town, 3, 3 F (General Farm).
 26. Hauling hay to town, 4, 8; butchering hog, 2 (Personal). Pork to Personal, \$25.
 27. Sold: 30 lb. butter @ 65¢; 17 qt. cream @ 50¢. Bought: gasoline, \$2.10; hay hooks, \$1.00. Going to town, 5, 5 F (Cattle).
 29. Hauling hay to town, 4, 8; dragging road, 3, 6 (Outside Labor).
 30. Hauling hay to town, 7, 14.
- Chores in November: Horses, 15; cattle, 142; hogs, 15; poultry, 8.*

Feeds: Horses, 600 lb. ground oats and barley, \$10.26; 2 T. hay, \$32; pasture, \$5.50. Cattle, 850 lb. oats, \$12.75; 6 T. hay, \$78; 800 lb. barley, \$13.20; pasture, \$7. Hogs, 2900 lb. barley, \$47.85; cracked peas, 416 lb., \$2.08. Poultry, 600 lb. wheat, \$9.00; 450 lb. cracked peas, \$2.25.

Farm products used in house: 15 doz. eggs @ 70¢; 10 gal. milk @ 30¢; 10 lb. butter @ 55¢; 1 chicken, \$1.00; 40 lb. potatoes, 67¢.

December

1. Sold 4 T. hay, \$50.00. Paid: Caswell for posts, \$17.50; Hultgrin for baling hay, \$50.00. Hauling hay to town, 4, 8; going to town for load of poles, 3, 6.
2. Hauling hay to town, 4, 8; hauling poles, 4, 8.
3. Hauling hay, 4, 8; hauling poles, 4, 8.
4. Sold: 36 lb. butter @ 65¢; 14 qt. cream @ 50¢. Bought gasoline, \$1.87. Hauling hay to town, 4, 8; going to town, 4, 4 F (Cattle).
6. Paid: Stucky for helping thresh, \$7.00; Holloway for helping thresh, \$3.75. Hauling hay to town, 16, 32.
7. Sold 30 T. 265 lb. hay, \$492.65. Hauling hay to town, 8, 16; going to town, 4, 4 F (General Farm); hauling 1 load manure on meadow, 4, 8.
8. Grinding oats and barley, \$3; digging ditch for hydrant, 16 (New House).
9. Sold 1032 lb. barley, \$14.35. Digging ditch for hydrant, 16 (New House).
10. Peeling poles for posts, 6; hauling feed for cows, 3, 6; hauling feed for horses, 3, 6.
11. Paid Jack Rone for labor, \$18.00. Received for road work (Outside Labor), \$13.65 (credit \$3.65 to Labor, \$10.00 to Horses). Sold: 32 lb. butter @ 65¢; 13 qt. cream @ 50¢. Working on ditch, 6 (New House); going to town, 3, 3 F (General Farm).
13. Sold 11 hogs, 2800 lb. @ 8½¢. Hauling hogs, 12, 24.
14. Tinkering with water engine, 2; hauling hay for horses, 2, 4.
15. Bought dammer at sale, \$7.50. Going to sale, 6, 6 F.
16. Hauling hay for cows, 1, 2.
17. Hauling hay for cows, 3, 6; repairing wagon, 3.
18. Sold: 27 lb. butter @ 60¢; 14 qt. cream @ 50¢; 4 chickens @ \$1. Going to town, 4, 4 F (Cattle); 1, 1 F (Poultry).
20. Hauling hay; 1½, 3 (Horses); 1½, 3 (Cattle).

21. Getting barley ground for hogs, 4, 8.
22. Hauling 1 load of manure on hay meadow, 2, 4; hauling hay for cattle, 3, 6; going to town, 3, 3 F (General Farm).
23. Hauling 1 load of manure on hay meadow, 1, 2; going to town, 3, F (General Farm).
24. Sold: 23 lb. butter @ 60¢; 14 qt. cream @ 50¢; 520 lb. barley, \$7.28. Bought: gasoline, \$1.78; lubricating oil, \$1.60. Hauling hay for cows, 1, 2; going to town, 3, 3 F (Cattle).
27. Bought: gasoline tank, \$17.28; cement for cellar floor, \$6.00 (New House). Hauling hay for cattle, 1, 2; going to town, 3, 6 (General Farm).
28. Sold 235 lb. chickens @ 15¢. Hauling 1 load manure on meadow, 1, 2; hauling hay for cattle, 1, 2.
29. Paid Kruger for plumbing, \$36.70. Hauling 1 load manure on meadow, 1, 2; going to town with poultry, 3, 6.
30. Hauling 1 load manure on meadow, 1, 2; hauling hay for cows, 1, 2.
31. Hauling 1 load manure on meadow, 1, 2; cement work in basement, 2.

Chores in December: Horses, 13; cattle, 155; hogs, 13; poultry, 5.

Feeds: Horses, 240 lb. ground oats and barley, \$3.74; 3 T. hay, \$42; pasture, \$3.50. Cattle, 1850 lb. ground oats and barley, \$28.86; 7½ T. hay, \$97.50; pasture, \$3.25. Hogs, 3560 lb. barley, \$53.40. Poultry, 650 lb. wheat, \$6.50.

Farm products used in house: 5 doz. eggs @ 85¢; 15 gal. milk @ 30¢; 10 lb. butter @ 50¢; 2 chickens @ \$1; 50 lb. potatoes @ 50¢.

January

1. Sold: 35 lb. butter @ 60¢; 13 qt. cream @ 50¢. Cement work in basement, 2; going to town with butter and cream, 3, 3 F.
3. Hauling hay for horses, 2, 4; hauling 1 load manure on meadow, 1, 2; cleaning henhouse, 1.
5. Grinding oats and barley, 4; hauling hay for cows, 2, 4.
6. Going to town to have feed ground, 5, 10.
7. Hauling hay for cattle, 2, 4; hauling hay for horses, 3, 6.
8. Sold: 33 lb. butter @ 60¢; 13 qt. cream @ 50¢. Paid: on survey on middle creek dam, \$10; note at bank, \$1200; interest on note at bank, \$72. Bought gasoline, \$3. Going to town with butter and cream, 5, 5 F.
10. Hauling 1 load of manure on meadow, 1, 2.

12. Hauling manure on meadow, 1, 2; hauling hay for cows, 2, 4.
14. Hauling hay for cows and putting hay in shed, 4, 8.
15. Sold butter and cream, \$26.20. Going to town with dairy products, 5, 5 F.
16. Hauling 1 load manure on meadow, 1, 2.
17. Cement work in basement, 4.
19. Cement work, 4 (New House).
20. Hauling dirt in barn, 1, 2; cement work, 1 (New House).
21. Hauling 1 load manure on meadow, 2, 4.
22. Sold: 34 lb. butter @ 55¢; 15 qt. cream @ 50¢. Paid Hallford for threshing, \$8.10. Going to town with dairy products, 5, 5 F.
24. Helping Hoadly butcher, 2 (Exchange Labor).
25. Hauling manure on meadow, 2, 4; hauling hay for cows, 1, 2.
26. Cement work on basement floor, 4.
27. Hauling 1 load of manure on meadow, 1, 2.
28. Paid: repairs on car, \$32.40; gasoline, \$2.45; grinding barley, \$1.60. Hauling barley to town for grinding, 14, 28.
29. Sold: 30 lb. butter @ 55¢; 16½ qt. cream @ 50¢. Going to town with dairy products, 4, 4 F.

Chores in January: Horses, 13; cattle, 155; hogs, 16; poultry, 2.

Feeds: Horses, ground oats and barley, 434 lb., \$6.34; 3 T. hay, \$33; pasture, \$3.50. Cattle, ground oats and barley, 3000 lb., \$45.30; 7½ T. hay, \$52.50. Pasture, \$2.50. Hogs, 2160 lb. ground oats and barley, \$33.70; 320 lb. barley, \$4.32. Poultry, 275 lb. wheat, \$2.75.

Farm products used in house: 3 doz. eggs @ 40¢; 30 gal. milk @ 30¢; 7 lb. butter @ 45¢; 2 chickens @ \$1; 50 lb. potatoes @ 30¢.

February

2. Going to town for load of coal, 4, 8.
4. Grinding feed, 5, 10.
5. Sold: 33 lb. butter @ 55¢; 16 qt. cream @ 50¢. Going to town with butter, 4, 4 F.
7. Sold: 2000 lb. oats @ \$1.35. Hauling oats, 4, 8.
8. Hauling hay to town, 4, 8. Sold 2625 lb. hay @ \$12 per T., \$15.75.
10. Sold: 2000 lb. oats at \$1.35 per 100 lb., \$27. Bought gasoline for car, \$1.87.
11. Cement work in basement, 4.
12. Sold: 34 lb. butter @ 50¢; 15 qt. cream @ 50¢. Going to town with dairy products, 5, 5 F.

14. Sold: 4 head cattle, \$245; 1 hog, 220 lb. @ 12¢. Butchering 4 hogs, 4 (Personal).
15. Sold: 2130 lb. oats, \$28.75; 3125 lb. hay, \$18.00; 108 lb. pork, \$13. Hauling oats to town, 4, 8.
16. Hauling hay to town, 4, 8.
17. Hauling 2 loads wheat to town, 8, 16.
18. Hauling wheat, 7, 14.
19. Sold: lard, \$9; 31 lb. butter @ 50¢; 14 qt. cream @ 50¢; 108 lb. pork, \$13. Hauling wheat, 4, 8; going to town with butter, 4, 4 F.
20. Received: for 11 hogs, \$226.36; for 45,500 lb. wheat, \$1073.
21. Hauling wheat, 6, 12.
22. Hauling hay for horses, 2, 4.
24. Cement work in basement, 4.
25. Going to town to get feed ground, 4, 8.
26. Sold: 32 lb. butter @ 50¢; 15 qt. cream @ 50¢. Going to town with butter, 4, 4 F.
28. Helping Keyes move, 6, 12.

Chores in February: Horses, 12; cattle, 140; hogs, 14; poultry, 2.

Feeds: Horses, 420 lb. rolled oats, \$6.64; 560 lb. ground oats and barley, \$8.18; 3 T. hay, \$27.85; 380 lb. ground oats and barley, \$5.74; 6½ T. hay, \$47.25; pasture, \$1.75. Hogs, 1622 lb. barley, \$21.90; 2800 lb. skim milk @ \$11.20. Poultry, 100 lb. wheat, \$1.00; 225 lb. peas, \$1.13.

Farm products used in house: 3 doz. eggs @ 40¢; 20 gal. milk @ 30¢; 10 lb. butter @ 45¢; 1 chicken, \$1; 50 lb. potatoes, 30¢. For the year, 700 lb. pork to Personal, \$56.

Inventory: February 28, 1921

Land, \$44,600; Buildings, \$5400; Supplies, \$1210.46; Equipment (General), \$738.50; Horses, \$885.00; Cattle, \$1065.00; Hogs, \$67.00; Poultry, \$27.00; Auto, \$250.00; Seasonal Work Record, \$276.73; Bills Payable (Farm Mortgage), \$4200; Bills Receivable, \$70.

Interest is charged at the rate of 7% as follows: Land, on \$44,600 for one year; Buildings, on \$4400; Barley, on \$200 for 4 months; Oats, on \$300 for 4 months; Peas, on \$600 for 3 months; Wheat, on \$500 for 4 months; Supplies, on \$2000; Equipment, on \$850; Horses, on \$1105; Cattle, on \$1363.75; Hogs, on \$350; Poultry, on \$112.25; Auto, on \$300.

The following accounts are charged for use of land as follows: Wheat, 24 acres; Oats, 18 acres; Barley, 13 acres; Peas, 28 acres; Hay, 91½

acres; Pasture, $19\frac{1}{2}$ acres; General Farm, $1\frac{1}{2}$ acres; Personal, $1\frac{1}{2}$ acres.

Horses and Cattle are credited with \$22 each for manure.

The total charged to General Farm is distributed among the following accounts in proportion to their magnitudes: Wheat, Oats, Barley, Peas, Hay, Cattle, Hogs, and Poultry.

MATERIAL FOR LABORATORY WORK IN COST ACCOUNTING

SET FOUR

This set of data, which was obtained from the Department of Farm Management of the New York State Agricultural College, Cornell University, is from a medium size farm in central New York. The principal product is milk, but some money is made by selling eggs and potatoes. About half the feed used is raised on the farm and the other half bought. In the accounts as originally kept there was no division of the land into permanent fields, nor was any record kept of the residual manure value left over after the first crop. The former is probably unfortunate, and the latter may be justified on the grounds noted in section 18 for intensive farming. There was also an account with Lime and with Fall Work, which are retained in the list given below. The various crops were distributed among the various animal groups and Supplies at the time they were harvested. A list of these is given on pages 279-281. The silage is charged to Supplies and Dairy at cost since little corn is raised for grain in this section (see section 83).

There is a separate account with Dairy Equipment, and the balance of this account is charged to Dairy.

The following accounts should be kept (possibly omitting Fall Work and Manure), and two opposite pages should be given to each account except as noted: Accounts Payable ($\frac{1}{2}$ of two pages), Accounts Receivable ($\frac{1}{2}$), Auto, Buildings ($\frac{1}{2}$), 1919 Cabbage ($\frac{1}{2}$), 1920 Cabbage ($\frac{1}{2}$), Corn for Grain ($\frac{1}{2}$), Corn for Silage, Dairy (4 pages), Dairy Equipment (4 pages), Fall Plowing ($\frac{1}{2}$), General Farm ($\frac{1}{2}$), General Equipment (4 pages), Hay ($\frac{1}{2}$), Hogs ($\frac{1}{2}$), Horses (4 pages), Interest, Inventory, Labor (4 pages), Land, Lime ($\frac{1}{2}$), Loss and Gain ($\frac{1}{2}$), Manure ($\frac{1}{2}$), Notes and Mortgages Payable ($\frac{1}{2}$), Oats ($\frac{1}{2}$), Orchard ($\frac{1}{2}$), Personal, Poultry, Potatoes, Supplies (4 pages), Wheat.

The following Labor Records should be kept: Auto ($\frac{1}{2}$ of one page), Buildings ($\frac{1}{2}$), 1919 Cabbages ($\frac{1}{2}$), 1920 Cabbages ($\frac{1}{2}$), Corn for Grain ($\frac{1}{2}$), Corn for Silage, Dairy (2 pages), Dairy Equipment ($\frac{1}{2}$), Fall Plowing

($\frac{1}{2}$), General Equipment, General Farm, Hay, Hogs, Horses, Land, Lime ($\frac{1}{2}$), Manure ($\frac{1}{2}$), Oats ($\frac{1}{2}$), Orchard ($\frac{1}{2}$), Personal, Potatoes, Poultry, Supplies ($\frac{1}{2}$), Wheat ($\frac{1}{2}$).

A record should be kept of all feed bought for Dairy (2 pages), and another record of feed set aside for dairy from Supplies or directly from crops (1 page). The sums of these should be charged to Dairy. There should be Sales Records with Sales of Milk (1 page) and a record showing Sales of Eggs (2 pages).

Inventory: December 23, 1919

Real Estate:

Operator's house	\$2400.00
Silo — 148' x 34'	250.00
Barn	2000.00
Granary	150.00
Corncrib	50.00
Tool shed and henhouse	200.00
20.6 acres crop land @ \$200	4120.00
30.8 acres crop land @ \$125	3850.00
1.63 acres swale	67.00
.8 acre orchard @ \$125	100.00
35.1 acres pasture equivalent @ \$40	1404.00
11.6 acres woodland equivalent @ \$40	464.00
16 acres woodland equivalent @ \$30	480.00
15.5 acres pasture equivalent @ \$30	465.00
5.35 acres Farmstead roads and waste	
137.38 acres total	<u>\$16,000.00</u>

Horses and Colts:

Three horses and one colt; total value \$400.00

General Equipment:

Total value 563.00

Dairy Equipment:

Total value 418.00

Dairy Herd:

Total value 1595.00

1920 Hay Seeding 60.00

Hogs 25.00

Poultry 78.00

Cabbage 600.00

Grains, Feeds, and Supplies 1180.00

1920 Oats: Fall plowing	\$12.40
1920 Wheat: Fall plowing	13.90
2 bu. seed @ \$2.25, \$4.50; 250 lb. phosphate	
\$3.50	8.00
Auto: Ford	500.00

Financial

Mortgages, Notes, and Accounts Payable: Mortgage, \$6000; Notes, \$3000; Accounts, \$254.42.

Accounts Receivable: Total, \$333.54.

Cash on Hand and in Bank: \$2547.11.

Diary of Farm Events from December 23, 1919, to December 22, 1920

The events are listed in chronological order as they occurred from day to day and are in the form in which the farmer had them when he entered them in his books. The numbers of man-hours and horse-hours are given in each instance by means of two consecutive numbers with a comma between them. In every case, the man-hours are given first. In case the tractor is used, this is indicated by the word *tractor* in parenthesis. Thus, 6, 12 indicates 6 hours man-labor and 12 hours horse-labor, while 4 indicates 4 hours man-labor and no hours horse-labor.

The time required daily for chores is given in the first of each month unless the time is changed during the month (see section 58).

December

Daily Chores: Horses, 1; Dairy, 6; Poultry, $\frac{1}{2}$.

23. Covering 1919 Cabbage, 2, 1 (2, 1 indicates 2 hr. man-labor and 1 hr. horse-labor). Horse shod, 75¢.
24. Working on equipment, 3 (3 indicates 3 hr. man-labor).
26. Husking corn, 1; getting milking machine repairs, 1, 2. Paid: grinding ensilage cutter knives, \$3; milking machine repairs, 10¢; 9 gal. gasoline for milker, \$2.61; 1 gal. disinfectant for dairy, \$1.50. Received on account, \$15.90.
27. Husking corn, 1; hauling grain for dairy, 1, 2. Bought: 500 lb. middlings for dairy, \$13.75; 200 lb. cottonseed meal for dairy, \$8.50; 200 lb. molasses feed for dairy, \$5.50.
29. Cleaning henhouse, 1; husking corn, 1.
30. Butchering hog 6 (Personal). Charge one hog to Personal, \$30, and credit Hogs.

31. Hauling straw for horses, 1, 2; having shoes set on Duke, 1, 1; husking corn, 1; working for Personal, 2; hauling straw for dairy, 2, 4.

During the period Dec. 23 to Dec. 31 inclusive: Hauling milk, 12, 24; hauling 10 loads manure, 5, 10; washing milking machinery, 1; chores for hogs, 2.

January

Daily Chores: Horses, 1; dairy, 7; poultry, $\frac{1}{2}$.

1. Husking corn, 1; hauling gluten for dairy, 2, 4. Bought 2240 lb. gluten for dairy, \$80.64.
2. Husking corn, 1; working for Personal, 2.
3. Husking corn, 1.
5. Cleaning ice house, 2 (Dairy). Bought: repairs for milking machine, 10¢; repairs for log chains, 20¢; ice tongs, \$1.45; hame strap, 35¢; 375 lb. 2-8-3 fertilizer for corn silage, \$8.59; 125 lb. 16% acid phosphate for oats, \$2.52; 1000 lb. 1-8-4 fertilizer for oats, \$21.52; 1625 lb. 2-8-3 fertilizer for potatoes, \$37.26.
7. Going to town for manure sleigh, 1, 2. Paid for horseshoe nailed 25¢. Sold 6 doz. eggs, \$3.90.
8. Trimming cabbage and putting in cellar, 4, 3; hauling corn for grain, 1, 2.
9. Husking corn, 1.
- 6-10. Hauling and packing ice, 20, 28 (Dairy).
10. Paid on account, \$4.
11. Hauling and packing ice, 5, 4 (Dairy).
12. Bought 1000 lb. wheat feed for dairy, \$28.50.
13. Bought 9 gal. gasoline for milker, \$2.61.
15. Bought sack salt for dairy, \$1.35. Paid on account, \$30.41.
16. Check for 10,097 lb. December milk, \$385.70.
17. Hauling and husking corn, 1, 1.
18. Hauling cabbage into barn, 2, 4; husking corn, 1.
19. Working for Personal, 1, 2.
21. Trimming cabbage, 4.
22. Repairing bobs, 1; hauling corn, 1, 1. 100 lb. wheat transferred from Dairy to Poultry, \$3. Sold 4 $\frac{1}{2}$ doz. eggs, \$3.09.
23. Loading and hauling cabbage, 4, 7; hauling corn, 1, 2. Sold 2680 lb. cabbage, \$120.60.
24. Hauling cabbage into barn, 5, 9. Sold calf, \$8.
25. Working for Personal, 4, 4.

26. Trimming cabbage, 5.
27. Trimming and hauling cabbage, 6, 9. Sold 3010 lb. cabbage, \$127.92. Paid on account, \$84.82.
28. Trimming and hauling cabbage into barn, 5, 6. Sold cow for beef, \$75. Borrowed on note, \$680.
29. Trimming cabbage, 5. Received on account, \$23.46.
30. Trimming and hauling cabbage, 5, 6. Sold 3200 lb. cabbage, \$114.95.
31. Paid taxes, \$160.55 (charge: Land, \$85.80; Buildings, \$39.00; Horses, \$3.10; Dairy, \$12.45; Dairy Equipment, \$3.10; General Equipment, \$3.90; Supplies, \$9.30; Auto, \$3.90). Received on account, \$279.56. Paid: interest on mortgage, \$330; on account, \$35; on mortgage, \$3500. Received interest on bank deposit, \$16.02.

During the month: Hauling milk, 16, 32; hauling 31 loads manure, 18, 36; washing milking machinery, 1.

February

Daily Chores: Horses, 1; dairy, 8; poultry, $\frac{1}{2}$.

2. Giving census returns, 1 (Personal); taking grist to town for horses, 1, 2; hauling grain for dairy, 1, 2; hauling and husking corn, 1, 1. Sold 8 doz. eggs, \$3.60. Bought: stable blanket, \$3; 9 gal. gasoline for milker, \$2.70; 1 gal. engine oil for milker, 60¢; 500 lb. wheat feed for dairy, \$14.25; 1000 lb. gluten for dairy, \$37.
4. Hauling hay, 4, 6. Bought bushel basket, \$1.25; weighing hay for sale, 10¢. Sold 1550 lb. hay, \$21.70.
7. Working for Personal, 2, 1. Bought repairs for milking machine engine, 28¢.
9. Sold $5\frac{1}{2}$ doz. eggs, \$3.30. Bought: $\frac{1}{2}$ lb. late cabbage seed, \$2.50; $\frac{3}{4}$ lb. early cabbage seed, \$4.50.
10. Hauling cabbage into barn and trimming, 5, 4.
11. Trimming and hauling cabbage, 6, 5. Paid: grinding oats for horses, \$1.38; grinding oats for dairy, 16¢. Sold 1770 lb. cabbage, \$53.10.
12. Hauling cabbage into barn and trimming, 6, 5.
13. Hauling cabbage into barn and trimming, 7, 6.
14. Hauling cabbage and trimming, 5, 5. Sold 3820 lb. cabbage, \$114.60. Bought: 1000 lb. wheat feed for dairy, \$28.50; 200 lb. cottonseed meal for dairy, \$8.50.

17. Veterinary inspection for grade A milk, \$2; check for 9780 lb. January milk, \$378.48.
 18. Sold 6 doz. eggs, \$3.60.
 19. Loading hay, 1.
 20. Sold 310 lb. hay, \$4.34.
 21. Bought: ensilage fork, \$2.20; manure sleigh, \$31; 9 gal. gasoline for milker, \$2.61; 100 lb. oil meal for dairy, \$4 50; 200 lb. buckwheat middlings for dairy, \$5 30. Paid on account, \$12.29.
 22. Shoveling snow from house roof, 1.
 23. Buying horse, 3, 6; driving cows, 2. Bought: horse (Cap) on account, \$225; 2 cows for cash, \$300.
 24. Hauling hay, 3, 5. Bought 9 gal. gasoline for milker, \$2.70. Sold 1160 lb. hay, \$16.24.
 25. Hauling grain for dairy, 2, 4. Had 2 saws filed, 70¢. Sold 4 doz. eggs, \$2.40. Paid on account, \$25.51. Bought: 1 8" file, 20¢; stable blanket (Horses), \$3.90; 570 lb. brewers' grain for dairy, \$19.95; 300 lb. oil meal for dairy, \$13.50; 1 lb. cabbage seed, \$10.
 26. Bought corn sheller, \$3.50.
 27. Cleaning henhouse, 2, 2. Bought garden seeds, \$4.95.
 29. Shoveling snow from barn roof, 1.
- During the month:* Hauling milk, 16, 32; hauling 31 loads manure, 24, 48; washing milking machinery, 4.

March

Daily Chores: Horses, 1½; dairy, 10; poultry, 3.

1. Bringing home corn sheller, ½, 1; sorting potatoes, 4. Sold calf, \$12. Bought: 100 lb. hominy for horses, \$3.65; 200 lb. cottonseed meal for dairy, \$8.50; 200 lb. oil meal for dairy, \$8.50; 400 lb. wheat bran for dairy, \$11; 200 lb. wheat middlings for dairy, \$6.50.
2. Working for Personal, 3; working on potatoes, 10, 6. Sold 3240 lb. potatoes, \$121.50.
3. Making income tax return, 4 (Personal); sorting potatoes, 4. Paid Federal income tax, \$29.60; State income tax, \$6.40. (Income taxes are "Personal" charges.) Borrowed, \$75. Bought sewing needles, awl, wax, and thread for Equipment, 60¢.
4. Taking grist to town for horses, 1, 2; working on potatoes, 6, 6; hauling grain and taking veal calf to town, 3, 6 (Dairy). Sold 3210 lb. potatoes, \$120.37. Bought: 500 lb. gluten for dairy,

- \$18.50; 1875 lb. 4-8-4 fertilizer for cabbage, \$56.35; 750 lb. 3-8-4 fertilizer for corn for grain, \$20.39; 875 lb. 3-8-4 fertilizer for corn silage, \$20.80; 125 lb. 4-8-4 fertilizer for garden, \$3.75.
5. Cleaning cows, 3.
 6. Sorting and shelling seed corn, 2 (Corn for Grain).
 7. Filing and setting crosscut saw, 2.
 8. Clipping horses' legs, 3.
 - 8-10. Working for Personal, 26.
 10. Sold 10 doz. eggs, \$5.
 11. Nailing shoes on horses, 1; grinding axes, 2. Bought: gall cure for horses, 25¢; auto license, \$7.63.
 12. Loading hay, 1; working on Personal, 1. Paid: for dehorning cow, 21¢; for dehorning 5 heifers, \$1.04. Sold 870 lb. hay, \$13.05.
 15. Hauling horse feed, 1, 2; grinding feed for horses, \$2.27. Bought 2 collar pads, \$1.80 (Equipment). Received check for 9052 lb. February milk, \$336.73.
 16. Loading hay, 2; working on Personal, 1. Sold 1340 lb. hay, \$20.10. Change daily chores on Dairy to 11.
 - 12-17. Covering ice, 7 (Dairy). Sold 5 doz. eggs, \$2.25. Bought belt laces for milker engine, 74¢.
 19. Sold cow for beef, \$55.
 - 11-20. Working for Personal, 40.
 20. Going to city for harness, 2, 4; getting sleigh pole repaired, 1, 2; hauling grain for cows, 2, 4. Bought: set double harness, \$95; repairs for sleigh pole, \$1; 9 gal. gasoline for milker, \$2.88; milking machine repairs, 65¢; 500 lb. brewers' grains for dairy, \$17.50; 100 lb. white wheat middlings for dairy, \$3.35; 100 lb. brown wheat middlings for dairy, \$3.25; 100 lb. oil meal for dairy, \$4.50; 870 lb. gluten for dairy, \$32.19.
 22. Filing and setting crosscut saw, 2. Sold calf, \$15.
 23. Working for Personal, 2. Bought antiseptic powder for dairy, 60¢.
 24. Working for Personal, 4; having team shod, 2, 4. Paid shoeing bill, \$4.25. Bought: 2 short nipples, 20¢ (Dairy Equipment); file, 30¢; muriatic acid to clean water tank for dairy, 35¢.
 25. Bought: 1000 lb. wheat feed for dairy, \$28.50; 1560 lb. gluten, \$59.57. Hauling feed for dairy, 3, 6.
 27. Cleaning henhouse, 2, 4.
 29. Repairing fence, 1; putting manure sleigh in granary, 1; working on apple trees, 5. Sold: 13 doz. eggs, \$6.24, 2 hens, \$5.85.

30. Trimming and setting out apple trees, 5. Sold calf, \$8.
 31. Working on equipment, 3; working for Personal (March 22-31), 50; plowing for corn for grain, 1, 2. Paid hired man, \$40.05. Bought Syracuse plow, \$25.

During the month: Hauling milk, 14, 28; hauling 38 loads manure, 32, 64; washing milking machinery, 4.

April

Daily Chores: Horses, 2; dairy, 10; poultry, $\frac{1}{2}$.

1. Working for Personal, 4.
2. Plowing for corn for grain, $12\frac{1}{2}$, 25. Bought: spading fork, 95¢; 1 bu. seed, \$3.50 (Corn for Grain).
3. Working for Personal, 2; plowing cabbage ground, 7, 14; digging out apple tree stump and setting trees, 3. Paid labor, \$5.
5. Moving hay in barn, 2 (Supplies).
6. Cutting and splitting fence posts, 8; plowing for corn silage, 3, 6.
7. Splitting posts and building fence, 5; plowing for silage corn, 4, 8. Paid labor, \$1.25. Sold $7\frac{1}{2}$ doz. eggs, \$3.38. Bought $\frac{3}{4}$ bu. silage corn seed, \$4.15.
8. Building fence, 2; filing and setting crosscut saw, 2; plowing for silage corn, 4, 8.
- 5-9. Working for Personal, 11.
9. Piling brush from orchard, 1; plowing for silage corn, 2, 4. Sold $\frac{1}{4}$ bu. corn for silage seed, 85¢.
10. Repairing evener and whiffletrees, 1; repairing fence, 1; sowing clover seed; $1\frac{1}{2}$, burning brush from orchard, 4; plowing for silage corn, 7, 14. Sold 28 cords of wood on stump, \$14.
12. Repairing plow, 1; going to town for equipment and repairs, 1; plowing for oats, 6, 12; plowing for silage corn, 2, 4. Bought: 17 lb. nails, \$1.25; gall cure for horses, 25¢; 1 hand rake, 50¢; 2 whiffletrees, \$1; shin piece and bolts for Syracuse plow, 85¢; collar pad, 90¢.
13. Repairing barn, 1; working on sulky plow, 2, 2; going after pigs, 2; plowing for oats, 3, 6; picking up potatoes, 1. Bought: axle grease, 15¢; 4 pigs, \$27; 200 lb. oil meal for dairy, \$8; 5 gal. gasoline for milker, \$1.60. Paid on account, \$4.01. Daily chores on hogs from this date on, $\frac{1}{2}$.
14. Working for Personal, 3, 6; plowing for oats, 9, 18. Sold 14 doz. eggs, \$5.60.
15. Plowing for oats, 7, 14; hauling grain for dairy, 2, 4. Bought:

- 1570 lb. gluten for dairy, \$57.30; 500 lb. wheat feed for dairy, \$15; 500 lb. oil meal for dairy, \$19.50. Sold: cow (Horns) for beef, \$43; 2 pigs, \$14.
16. Plowing for oats, 9, 18. Check for 9453 lb. March milk, \$340.30. Bought: 2 bu. seed corn, \$9 (Silage Corn); 1 bu. timothy seed, \$7; $\frac{3}{4}$ bu. medium clover seed, \$28.50; $\frac{1}{2}$ bu. Alaska clover seed, \$19.
17. Plowing for oats, 7, 14; hauling away limb wood (Orchard), 2, 4. Bought belt laces for engine, 74¢ (Dairy).
18. Plowing for oats, 1, 2; harrowing for oats, 8, 16; plowing for silage corn, 1, 2.
19. Picking stone, 11, 22 (Real Estate); working for Personal, 2, 2.
20. Harrowing for oats, 9, 18.
21. Working on equipment, 5. Sold $8\frac{1}{2}$ doz. eggs, \$3.23. Bought 8 T. lime, \$40.
22. Going to town for repairs, 1 (Equipment). Bought: 2 clevises, 30¢; 2 jockeys for neck yokes, \$1.30; plow wheel, \$1.40; 9 gal. gasoline for milker, \$2.88. Sold $1\frac{1}{4}$ doz. eggs, 60¢.
- 22-23. Plowing cabbage ground, 20, 40. Paid for auto storage, 25¢. Bought auto lenses, \$2.75.
24. Cleaning up load of hay, 3, 5; sowing 200 lb. lime, $\frac{1}{2}$, 1; plowing for silage corn, 6, 12. Paid labor, \$20.
26. Sowing lime, 6200 lb., 5, 10.
27. Overhauling drill, 1; mixing grass seed, 1; sowing 2600 lb. lime, 3, 6; plowing for silage corn, 2, 4. Paid for repairs for drill, \$1.64.
28. Splitting and sharpening posts, 2; plowing for silage corn, 5, 10. Sold $11\frac{1}{2}$ doz. eggs, \$4.82. Paid express on silage corn seed, 54¢.
29. Picking stone, 11, 22; loading hay, 2; plowing for corn silage, 4, 8; grinding feed for horses, 94¢. Sold 1700 lb. hay, \$25.50. Bought: $\frac{1}{2}$ bu. timothy seed, \$3.06; 25 bu. seed oats, \$33.75.
30. Harrowing for oats, 6, 18; drilling oats, 2, 4; working for Personal, 6, 9.
- During the month:* Hauling milk, 10, 20; hauling 31 loads manure, 25, 4; washing milking machinery, 4.

May

Daily Chores: Horses, 2; dairy, 8; poultry, $\frac{3}{4}$; hogs, $\frac{1}{2}$.

1. Drilling oats, 6, 12; harrowing oat ground, 6, 12.

3. Building hencoop, 2 (Buildings); preparing cabbage bed and sow-

- ing seed, 3, 4; harrowing oat ground, 1, 2; drilling oats, 1, 2. Paid telephone bill, \$24 (charge \$16 to General Farm and \$8 to Personal).
4. Plowing cabbage bed, 1, 2; plowing for potatoes, 17, 34. Bought 2 bu. seed, \$12.25 (Silage Corn).
 5. Altering colt, 3; cleaning up hay used on cabbages, 1, 2 (1919 Cabbages); harrowing cabbage bed, 1, 2.
 6. Picking stone, 4; harrowing for potatoes, 6, 24; sowing 1625 lb. 2-8-3 fertilizer on potatoes, 3, 6. Bought 2 cans of skim milk for hogs, 80¢.
 7. Working on potatoes, 24, 11.
 8. Working for Personal, 6, 6. Paid labor, \$10. Bought gall cure for horses, 35¢.
- 6-8. Cutting up potatoes, 14.
10. Sowing and dragging in cabbage seed, 1, 1; harrowing silage corn ground, 2½, 10. Paid for milker repairs, \$1.16; returned 2 bu. silage corn seed, \$9. Bought: 540 lb. gluten for dairy, \$19.71; 1 sack salt for dairy, \$1.25; 1 bu. seed, \$4.75 (Silage Corn). Sold 1 doz. eggs, 47¢.
 11. Shelling corn for poultry, 1; loading hay, 1; rolling oat ground, 5, 10; skinning calf, 1 (Dairy). Paid labor, \$10. Credit calf to Dairy, \$10. Charge Personal, \$10.
 12. Sharpening posts and fixing fence, 4. Sold 7½ doz. eggs, \$3.24. Paid fire insurance premium, \$48.99 (Buildings).
 13. Turning heifers out to pasture, 2; working for Personal, 8; harrowing silage corn ground, 6, 24. Sold: 5¼ doz. eggs, \$2.67; 1 rooster, \$2.75; 5 bu. potatoes, \$18.
 14. Picking stone, 7, 14; plowing, harrowing, and seeding for oats in wet spot, 4, 8; plowing silage corn ground, 3, 6.
 15. Sharpening posts and building fence, 6, 7; harrowing cabbage bed, 4, 16; shelling seed, ½ (Corn for Grain); shelling seed, 1 (Silage Corn). Bought 9 gal. gasoline for milker, \$3.06.
 16. Check for 13,260 lb. April milk, \$287.
 17. Getting heifers back in pasture, 4; cleaning pen for heifers, 1, 2; drilling silage corn 4, 8; harrowing silage corn, 5, 20. Bought 2 cans of skim milk for hogs, 80¢.
 18. Paid: labor, \$5; for auto repairs, \$1; for milker repairs, 40¢. Drilling silage corn, 2, 4.
- 13-19. Working for Personal, 3, 2.

19. Cleaning up hay in yard, 1 (1919 Cabbage); drilling silage corn seed, 1. Sold: $7\frac{1}{2}$ doz. eggs, \$3.29; 2 bu. potatoes, \$7.
- 15-20. Harrowing corn for grain, 5, 20; drilling corn for grain, 3, 6.
20. Hauling posts, 2, 4; preparing seed for corn for grain, 3. Paid for grinding feed for horses, \$1.16. Transferred from Dairy to Horses, 400 lb. wheat feed, \$12. Bought: 200 lb. wheat feed for Dairy, \$7.50; 100 lb. wheat middlings for hogs, \$4. Paid: for weighing hay, 10¢; interest on note for horse, \$3.38; note for horse, \$225.
21. Sharpening posts, 2; repairing house, 2. Bought: cabbage setter, \$6; 500 lb. gluten, for dairy, \$18.75.
22. Grading yard, 1 (Land); repairing fence, 4, 4; trimming tree in yard, 1; building pen in orchard for hogs, 2. Sold 7 doz. eggs, \$3.22.
24. Harrowing cabbage bed, 5, 20. Sold 3 doz. eggs, \$1.32.
- 21-25. Working for Personal, 26, 19.
25. Going to town for grain for horses, 1, 2. 200 lb. wheat feed transferred from Dairy to Horses, \$6. Bought: 300 lb. hominy for horses, \$11.40; 1000 lb. wheat feed for dairy, \$32.50. Sold 380 lb. potatoes, \$22.16.
26. Floating horses' teeth, 2.
- 25-27. Picking stone, 17, 34.
27. Going to town for trees, 1 (Personal); sowing 6100 lb. lime, 5, 10; harrowing corn silage ground, 3, 6. Paid: for sulky cultivator repairs, 45¢; parcel post charges on cultivator repairs, 5¢; for fruit trees, \$12; express on fruit trees, 27¢.
28. Hauling load of posts for fence, 2, 4; washing auto, 2; harrowing corn silage ground, 2, 4. Sold $6\frac{1}{2}$ doz. eggs, \$3.15.
- 28-29. Cultivating potatoes, 4, 4.
29. Cultivating corn silage, 6, 12. Paid labor, \$10. Sold 1 doz. eggs, 48¢.
30. Paid labor, \$5.
31. Fixing barnyard fence, 1 (Land); cultivating corn for grain, 2, 4; cultivating silage corn, 2, 4; planting in silage corn, 2; hauling grain for dairy, 1, 2. Bought: 100 lb. oil meal for dairy, \$3.80; 500 lb. gluten for dairy, \$18.75; 25 lb. chick feed for poultry, \$1.25.

During the month: Hauling milk, 6, 12; hauling 26 loads manure, 21, 42; washing milking machinery, 4.

June

Daily Chores: Horses, 2; dairy, 7; poultry, $\frac{2}{3}$; hogs, $\frac{1}{2}$.

1. Harrowing potatoes, 2, 4; planting silage corn, 2. Bought: $\frac{1}{2}$ oz. potassium permanganate for horses, 25¢; 8 gal. gasoline for milker, \$2.72. Sold: 6 doz. eggs, \$2.64; 20 lb. 1919 hay, 25¢.
2. Planting corn for silage, 1.
3. Cultivating silage corn, 6, 6. Bought strychnine for crows, 50¢ (Corn for Grain).
- 3-4. Cultivating corn for grain, 3, 6. Bought 10 gal. gasoline for auto @ 34¢, \$3.40.
4. Hauling grain for dairy, 1, 2; cultivating corn for silage, 10, 10; planting corn for silage, 3. Paid: hired man, \$10; day labor, \$6. Bought 500 lb. gluten for dairy, \$19.10.
5. Repairing fence, 2; hunting for colt, 1; repairing auto, 1; looking up heifers, 4. Sold $5\frac{1}{2}$ doz. eggs, \$2.64.
7. Cultivating silage corn, 10, 15. Sold: $3\frac{1}{2}$ doz. eggs, \$1.54; 2 bu. potatoes, \$7. Paid on account, \$37.24.
- 2-8. Planting corn for grain, 4.
- 7-8. Disking cabbage ground, 8, 24.
8. Harrowing cabbage ground, $3\frac{1}{2}$, 14; working for Personal, 2; cultivating silage corn, 1, 2. Received on account, \$14.62.
- 4-9. Working for Personal, 2, 1.
9. Fixing hen yard fence, 2 (Poultry); picking stone, 9, 18; hilling potatoes, 3, 6.
- 5-10. Drilling fertilizer on cabbage, 7, 14.
10. Working for Personal, 10; fitting screen in house, 1; mixing grain for dairy, 1. Paid for grinding feed for horses, \$1. Bought 186 cakes ice, \$5.58 (Dairy). Sold 1 doz. eggs, 48¢.
11. Repairing riding cultivator, 2; washing and oiling auto, 2; cultivating corn for grain, 3, 3; cultivating silage corn, 5, 7.
12. Bought gas and oil for auto, \$1.68.
13. Sold 2 doz. eggs, 96¢.
14. Cultivating silage corn, 10, 14.
15. Cultivating silage corn, 4, 8.
16. Sold $2\frac{1}{2}$ doz. eggs, \$1.10.
17. Work for Personal, 5; repairing fence, 1. Paid: labor, \$10; for milking machine repairs, 80¢. Bought: 100 lb. oil meal for dairy, \$3.80; 200 lb. wheat feed for dairy, \$7.00; 12 gal. gasoline for auto, \$4.08. Check for 13,260 lb. May milk, \$380.56.

- 18 Marking cabbage ground, 2½, 2. Paid labor, \$5.
15-19. Harrowing cabbage ground, 5, 20.
17-19. Pulling cabbage plants and setting, 38.
18-19. Working for Personal, 4.
19. Paid labor, \$10. Bought 9 gal. gasoline for milker, \$3.06. Sold 1 gal. gasoline from milker, 34¢.
20. Paid: hired man, \$7; extra labor, 50¢.
22. Cultivating silage corn, 2, 2.
23. Cultivating silage corn, 1, 1.
24. Marking cabbage ground and hauling water, 3, 3.
25. Cultivating silage corn, 5, 5. Bought: 300 lb. wheat feed for dairy, \$10.50; 500 lb. gluten for dairy, \$18.75.
27. Bought 1 gal. engine oil for milker, 44¢.
28. Getting team shod, 2, 2; cultivating cabbage, 4, 4; cultivating silage corn, 4, 4. Paid for horseshoeing, \$4.25. Bought: grindstone, \$10; scythe stone, 25¢; 1000 lb. wheat feed for dairy, \$35; 1000 lb. gluten for dairy, \$37.50. Sold: 1 gal. gasoline from milker, 35¢; 3 doz. eggs, \$1.35; ½ bu. potatoes, \$1.75.
28-29. Hauling grain for dairy, 9, 9.
29. Working on equipment, 4; cultivating corn for grain, 2, 2; cultivating silage corn, 4, 4. Paid extra labor, \$1. Bought: mower knives and rivets, \$1.55; 3 T. oil meal for dairy, \$2.10.
21-30. Setting cabbage plants, 90.
22-30. Working for Personal, 14.
30. Mowing roadside hay, 3, 6; mowing alfalfa, 1, 2. Sold 3 doz. eggs, \$1.44.
During the month: Hauling milk, 14, 28; hauling 7 loads manure, 7, 14; washing milking machinery, 4.

July

Daily Chores: Horses, 2; dairy, 7; poultry, ½; hogs, ½.

1. Repairing wagon, 3; working on hay, 11, 8.
2. Mowing and raking hay, 2, 4; spraying potatoes, 4, 4. Sold: 1 gal. gasoline from milker, 35¢; 1 doz. eggs, 48¢.
3. Working on implements, 1; working on hay, 8, 10. Bought: hoe, \$1; pitchfork, \$1.10; 5 gal. gasoline for milker, \$1.70; 1 gal. disinfectant for milker, \$1.25; 100 lb. wheat middlings for hogs, \$4.
5. Mowing hay, 2, 4; cultivating potatoes, 6, 9. Paid hired man, \$10. Bought: 3 pump valve leathers, 35¢; milker repairs, 10¢.

- 2-6. Cultivating cabbage, 11, 11.
6. Haying, 9, 9; cultivating corn for grain, 2, 2; cultivating silage corn, 3, 3.
- 1-7. Working for Personal, 10, 1.
7. Repairing wagon pole, 1; mowing hay, 1, 2. Bought punch, 40¢.
8. Working for Personal, 2; grinding mower knives, 1.
9. Haying, 16, 16.
- 6-10. Hoeing cabbage, 23.
10. Going after wagon wheels, 1, 2; raking and hauling hay, 12, 14. Sold 2 doz. eggs, \$1. Bought: 10 lb. twine, \$1.60 (Corn for Grain); 55 lb. twine, \$8.60 (Corn for Silage); 32 lb. twine, \$5.20 (Oats); 2½ lb. twine, 40¢ (Wheat).
12. Repairing hogpen in orchard, 1 (Hogs); haying, 5, 8. Sold 5½ doz. eggs, \$2.75.
13. Paid hired man, 50¢. Received for outside labor, \$1.60. Bought: oil for auto, 25¢; 10 gal. gasoline for auto @ 34¢, \$3.40.
14. Mowing hay, 2, 4; weeding silage corn, 1.
- 12-15. Spraying potatoes, 15.
15. Repairing rake, 1; haying, 12, 10; freight on auto oil, 52¢. Bought: rope for hay fork, 31¢; 2 bolts for horse rake, 8¢; repairs for horse rake, 10¢. Transferred ½ gal. gasoline from milker to Auto, 20¢. Sold ½ gal. gasoline from Dairy Equipment, 20¢.
- 12-16. Cultivating corn for grain, 3, 3.
16. Working on hay, 16, 18. Change daily chores on Dairy to 6. Check for 12,799 lb. June milk, \$392.92.
17. Working on hay, 14, 16. Paid hired man, \$10.
- 14-18. Working on Personal, 5.
18. Repairing barn, 1. Paid hired man, \$5. Bought 150 celery plants for garden, \$1.50.
- 12-19. Grinding mower knives, 2.
19. Mowing hay, 2, 4; pulling weeds in corn for grain, 1; pulling weeds in silage corn, 3. Bought: 100 lb. corn meal for horses, \$3.97; 9 gal. gasoline for milker, \$3.06.
- 16-20. Cultivating cabbage, 6, 6.
- 18-20. Working for Personal, 17, 2.
20. Sowing 125 lb. nitrate soda on cabbage, 1; haying, 5, 5. Wheat feed transferred from Dairy to Horses, \$3.
21. Haying, 11, 11; repairing and storing hay truck, 3; cultivating cabbage, 16; repairs on hay truck, 40¢. Bought 1 sack salt, \$1.25 (Dairy). Sold 6 doz. eggs, \$2.88.

22. Salting heifers, 2; unloading hay, 2, 4.
 23. Repairing cultivator, 1; raking hay scatterings and hauling, 1, 2.
 24. Grinding mower knives, 1; pulling weeds in corn for grain, 3.
Paid hired man, \$10.
 25. Took party to town, \$1 (credit Auto). Sold: 2 doz. eggs, \$1;
50 lb. blue vitriol, \$6 (1919 Supplies).
 26. Repairing fence, 1; working on hay, 6, 6; working on wheat, 2,
1. Bought 8 gal. gasoline for auto @ 34¢, \$2.72.
 27. Working on hay, 17, 14. Bought 10 gal. oil for auto, \$11.76.
 28. Working on hay, 19, 20.
 29. Working on hay, 11, 12. Sold cow for beef, \$45.
 30. Working on hay, 14, 16. Sold 1 doz. eggs, 53¢. Bought: 400
lb. gluten for dairy, \$14; 200 lb. wheat feed for dairy, \$6.80.
 - 21-31. Working for Personal, 22, 7.
 31. Pulling weeds in cabbage, 4; working on hay, 6, 5.
- During the month:* Hauling milk, 17, 34; hauling 7 loads manure,
7, 14; washing milking machinery, 4.

August

- Daily Chores:* Horses, 2; dairy, 7; poultry, $\frac{1}{2}$; hogs, $\frac{3}{4}$.
1. Digging potatoes, 1. Sold 9 doz. eggs, \$4.77.
 2. Repairing manure spreader, 2; raking hay, 2, 4. Bought bolt for
manure spreader, 9¢.
 3. Getting heifers back into pasture, 3. Paid day labor, \$4.
 4. Harvesting wheat, 14, 9. Owe for threshing 32 bu. wheat, \$3.20.
 5. Harvesting oats, 21.
 6. Taking broilers to town, 1; cultivating cabbage, 5, 5; working
on oats, 9. Sold 10 broilers, \$12.54.
 7. Cleaning calf pen, 1 (Dairy). Sold $1\frac{1}{2}$ doz. eggs, 63¢.
 - 5-9. Grinding scythe, 1.
 - 7-9. Repairing wagon, 3.
 9. Mowing hay, 5, 5; setting up oats, 2. Bought: iron for wagon
box, 50¢; 1 hand sprayer, 90¢; 12 gal. gasoline for auto, \$4.08.
 - 2-10. Working for Personal, 7; pulling weeds in cabbage, 20.
 - 7-10. Pulling weeds in corn for grain, 9.
 10. Having shoes set on horses, 1. Paid for setting shoe on Cap,
45¢. Bought: 200 lb. hominy for horses, \$7.50; 400 lb. gluten
for dairy, \$14; 100 lb. wheat feed for dairy, \$3.40.
 17. Storing machinery, 2; bringing 2 heifers from pasture, 4; clean-
ing henhouse, 1.

12. Looking up heifer, 1; working in orchard, 1. Received for damage in oats by neighbor's colts, \$20 (credit Oats). Bought: 400 lb. wheat feed for dairy, \$13.60; 9 gal. gasoline for milker, \$3.06.
13. Haying, 8, 6.
14. Haying, 5, 6. Bought: barn shovel, 85¢; rope, 65¢; auto repairs, \$3; spray for dairy, \$1.50; milker repairs, \$3.45.
15. Getting heifers back into pasture, 2.
- 13-16. Working for Personal, 5.
16. Cleaning henhouse, 4. Paid hired man, \$15.
17. Setting over oats, 1. Received check for 8775 lb. July milk, \$297.47. Bought 14 gal. gasoline for auto @ 34¢, \$4.76.
18. Getting pigs in pen, 2; turning loose oats, 1; hauling coal for threshing oats, 2, 4; took party to town, 50¢ (credit Auto).
- 12-19. Pulling weeds in corn for grain, 11.
19. Repairing mower, 2; chasing pig and repairing pen, 2; mowing second alfalfa crop, 2, 4. Paid: hired man, \$5; veterinary fees for horses, \$4; veterinary fees for colt, \$5; veterinary fees for dairy, \$10.
20. Working for Personal, 6; repairing fence, 2; working on hay, 5, 5; resetting oats, 3. Paid for setting wagon tires, \$1.75. Sold 5 doz. eggs, \$2.90. Bought: 300 lb. wheat feed for horses, \$10.20; 400 lb. gluten for dairy, \$14.
21. Emptying wheat, 2; overhauling milker pump, 2 (Dairy Equipment).
22. Sold heifers to Pratt, \$150.
23. Working on oats, 14, 5; bringing cow and calf from pasture, 2; mixing grain for dairy, 1. Sold calf, \$7. Paid for parts for milker, \$1.45.
24. Working on oats, 41, 15. Owe for threshing 374 bu. oats, \$22.44.
25. Work on oats, 6.
- 21-26. Pulling weeds in corn for grain, 8.
26. Building garage doors, 3; repairing barn, 1. Paid for extra labor, \$2.25.
27. Repairing and oiling auto, 1; bought blow-out patches for auto, \$1.10.
28. Bought: padlock for garage, \$1 (Buildings); 20 lb. nails, \$1.40. Paid hired man, \$20. Sold: 3 doz. eggs, \$1.80; 1 chicken, \$1.25; 1 doz. ears sweet corn, 20¢ (Garden).
29. Digging potatoes, 1.

- 25-30. Cutting and hauling green corn, 5, 6 (Dairy).
27-30. Building garage doors, 4.
30. Working on water supply, 3; mowing alfalfa, 1½, 3. Bought: hooks and staples for garage doors, 20¢; 200 lb. wheat feed for horses, \$6.50; 200 lb. distillers' grains for dairy, \$7.60; 200 lb. wheat feed for dairy, \$6.50.
21-31. Working for Personal, 31, 4.
31. Picking apples, 1.
During the month: Hauling milk, 16, 32; hauling 20 loads manure, 17, 34; washing milking machinery, 4.

September

Daily Chores: Horses, 1½; dairy, 7; poultry, ½; hogs, ½.

1. Working on auto, 1. Sold: 9 doz. eggs, \$5.25; 2 chickens, \$2.80. Bought on credit, 4 T. Big Repeater feed for dairy, \$281.90. Bought: 7 gal. gasoline for milker, \$2.45; 2 gal. gasoline to saw wood, 70¢. Sold calf, \$10.50.
2. Working on hay, 3, 6; hauling grain for dairy, 3, 6; getting cow and calf, 2.
4. Getting heifers back into pasture, 3. Paid for milker repairs, \$2.
- 1-5. Working for Personal, 17, 1.
6. Chiseling groove in barn floor, 2; taking auto to city for repairs, 1. Paid: hired labor, \$10; carfare, 10¢ (charge Auto). Sold 2 qt. gasoline from milker, 25¢. Bought: 1000 lb. soft coal for threshing oats, \$6.10; 12 gal. gasoline for auto, \$4.08.
7. Going for auto, 1; picking apples, 2. Paid: for auto repairs, \$9.05; carfare charged to Auto, 10¢. Bought: 100 lb. wheat feed for heifers, \$3.40; 200 lb. middlings for hogs, \$6.50. Sold 4 doz. eggs, \$2.32. Borrowed on note, \$326.23.
8. Cutting and hauling corn, 3, 3 (Dairy).
- 2-9. Digging potatoes, 5; picking up and hauling potatoes, 2, 2.
- 6-9. Working for Personal, 7.
9. Sold: calf, \$8; 1 qt. milk, 12¢.
10. Hunting colt and getting back in pasture, 4; cutting and hauling cabbage, 3, 1 (Dairy). Sold: 3 doz. eggs, \$1.95; 1 chicken, \$1.25; 1 bu. apples, \$1.
11. Cleaning pen, 1 (Dairy); repairing milker, 1. Sold 3 doz. ears sweet corn, 36¢.
12. Repairing fence, 1; getting horses back in pasture, 1; going to pasture for Heifers, 1. Sold ½ bu. crab apples, 50¢.

13. Getting horse shod, 1. Paid for horseshoeing, \$2.10. Bought 10 gal. gasoline for milker, \$3.30.
 14. Taking broilers to market, 1, 1. Sold: 2 qt. milk, 25¢; 23 broilers, \$7.36.
 - 11-15. Cutting and hauling green corn for dairy, 3, 4. Sold 25 lb. twine, \$4.25 (credit Corn for Silage).
 15. Paid for auto storage, \$1. Sold: 2 calves, \$14; 2 bu. apples, \$1. Bought 30 gal. kerosene to cut silage corn, \$6. Transferred 3 gal. kerosene to Silage Corn from Personal, 60¢.
 16. Grinding corn knives, 1; emptying oats, 1; picking crab apples and plums, 1. Sold 1 gal. gasoline from milker, 40¢.
 17. Repairing corn rack, 2; getting ensilage cutter, 4, 1 (Equipment). Picking apples, 1; cutting roads in silage corn, 1. Paid day labor, \$2.50. Check for 6937 lb. August milk, \$271.23.
 18. Cutting roads in silage corn, 2. Bought: file for ensilage cutter, 55¢; pine tar for cutter belt, 35¢. Paid auto insurance, \$23.62.
 - 11-19. Working for Personal, 5.
 - 15-19. Cutting and hauling cabbage for dairy, 4, 7.
 - 16-19. Cutting and shocking corn for grain, 13.
 19. Cutting roads in silage corn, 2.
 - 11-20. Working on potatoes, 87, 16.
 20. Working on corn silage, 32, 24. Paid trolley fare going for tractor to cut silage corn, 10¢.
 21. Changing knives on cutter, 2; repairing wagon, 1; working on corn silage, 54, 54; working on potatoes, 12, 5.
 22. Working on silage corn, 31, 31. Sold 8 doz. eggs, \$4.64.
 23. Digging potatoes, 14, 2. Bought: 200 lb. wheat feed for horses, \$6.20; 100 lb. corn meal for horses, \$3.67; corn knife, 60¢.
 25. Salting heifers, 1.
 27. Cutting and hauling cabbage for dairy, 5, 5; hauling green corn for dairy, 1.
 28. Working on cutter, 8; cutting silage corn by hand, 10. Paid: hired man, \$5; for repairs on wagon, 25¢; for grinding ensilage cutter knives, \$3.75.
 29. Cleaning in barn: Horses, 1; Cattle, 1. Working for Personal, 1; hauling and refilling silo, 25, 21.
 30. Working for Personal, 4.
- During the month:* Hauling milk, 15, 30; hauling 15 loads manure, 12, 24; washing milking machinery, 4.

October

Daily Chores: Horses, $1\frac{1}{2}$; dairy, 7; poultry, $\frac{1}{2}$; hogs, $\frac{1}{2}$.

1. Repairing fence, 1; hauling corn and refilling silo, 12, 12; re-turning tractor, 2 (Equipment); grinding valves on milker engine, \$1.
2. Bought barbed wire, \$6.50. Sold: 1 gal. gasoline from auto, 50¢; 200 lb. early cabbage, \$1.75.
4. Working on corn for grain, 2, 1.
5. Cutting corn for grain, 7, 10. Paid for shoe set on horse, 45¢. Bought: 2 qt. linseed oil for dairy, 80¢; 9 gal. gasoline for milker, \$3.15.
6. Working in garden, 2; repairing manure spreader, 1. Sold 6 doz. eggs, \$3.90. Bought 8 gal. gasoline for auto @ 34¢.
7. Cleaning pen, 1 (Dairy). Membership in Homer Prod. Ass'n, \$5 (charge 1920 Cabbage).
- 5-8. Setting up corn for grain, 21.
8. Paid extra labor, \$2.50.
- 6-9. Work for Personal, 7, 4.
9. Paid extra day labor, \$5.
11. Repairing fence, 1.
12. Sold 2 molasses barrels, \$3 (credit 1919 Supplies).
13. Working for Personal, 12, 1.
14. Going for sulky plow and overhauling, 2, 1. Sold 100 lb. cider apples, 40¢.
15. Bought: 100 lb. corn meal (Horses), \$2.90; 200 lb. wheat feed for horses, \$5.70; 2 qt. linseed oil for dairy, 80¢.
16. Paid hired man, \$20. Sold 9 molasses barrels, \$13.50 (credit 1919 Supplies).
18. Driving heifers home, 4; picking apples, 1. Received check for 9226 lb. September milk, \$381.03. Sold calf, \$6. Paid for use of tractor filling silo, \$25.50; owe on account for same \$14.40.
19. Paid hired man, \$6.
22. Getting heifer into pasture, 1.
23. Hauling corn for grain, 2, 2. Bought: 9 gal. gasoline for milker, \$3.15; 1 sack salt for dairy, \$1.40; milker parts, \$1.45. Sold: cowhide, \$3.36; 1 doz. eggs, 80¢.
25. Working for Personal, 4; fall plowing Field C, 5, 10.
26. Working on auto, 1; working for Personal, 4. Sold 12 bu. cider apples, \$4.80.

23-27. Working in garden, 6, 2.

27. Hauling load of cabbage, 2, 2.

28. Hauling cabbage, 10, 14.

29. Hauling cabbage, 6, 8; cutting cabbage, 14.

30. Working for Personal, 6, 2; covering cabbage, 3, 3.

31. Oiling auto, 1.

During the month: Hauling milk, 15, 30; hauling 30 loads manure, 23, 46; washing milking machinery, 4.

November

Daily Chores: Horses, 2; dairy, 8½; poultry, ½; hogs, ½.

1. Special work on hogs, 2. Bought butcher knife for cabbage, 50¢ (General Equipment). Sold hog, \$30.80.

2. Paid hired man, \$5. Bought: 200 lb. wheat feed for horses, \$5.27; 100 lb. corn meal for horses, \$2.50.

4. Extra work on horses, 4; grinding knives, 1. Paid extra labor, \$7.

5. Returned 9 grain sacks, 63¢ (credit Horses); bought rivets, 40¢. Paid interest on note, \$1.21; note, \$326.23.

1-9. Cutting cabbage, 29. Bought 10 gal. gasoline for auto, \$3.40.

7-9. Working for Personal, 3, 2. Sold 3 bu. apples, \$3.

9. Fall plowing Field C, 3, 6. Bought: pair bobs, \$30; cultivator, \$1.50.

1-10. Hauling and unloading cabbage, 66, 78.

3-10. Hauling hay and covering cabbage, 7, 5.

10. Going for bobs and cultivator, 1; fall plowing Field C, 1, 2.

11. Cleaning pen, 2, 4 (Dairy).

12. Getting horses in barn, 1; getting heifer into barn, 1; special work on poultry, 2.

13. Hauling and unloading 8435 lb. cabbage, 8, 12.

14. Special work on horses, 1.

15. Hauling grain for horses, 1, 2. Bought: 100 lb. corn meal for horses on account, \$2.50; 200 lb. wheat feed for horses on account, \$5.20.

16. Repairing cistern, 1; hauling corn for grain, 10, 10. Check for 10,694 lb. October milk, \$436.31.

17. Work on auto, 1; covering cabbage, 2, 1; fall plowing Field C, 1, 2; fall plowing Field J, 4, 8. Paid school tax, \$24.91 (charge: Land, \$13.30, Buildings, \$6.05, Horses, 48¢, Dairy, \$1.95, Dairy Equipment, 48¢, General Equipment, 60¢, Supplies, \$1.45, Auto, 60¢). Rented whitewash pump for spraying, \$2 (Dairy).

18. Moving hog, 1; fall plowing Field J, 6½, 13. Bought horseshoe nails, 15¢ (Horses). Paid for milker repairs, 15¢.
- 11-19. Working in garden, 6, 1,
19. Putting up and hauling grist for horses, 2, 2; fall plowing Field J, 7, 14. Bought: 500 lb. cottonseed meal for dairy on account, \$15; 500 lb. wheat feed for dairy on account, \$13; 1000 lb. gluten for dairy on account, \$26.70.
- 12-20. Trimming cabbage, 12.
20. Extra work on hogs, 1; fall plowing Field J, 7, 14.
21. Cleaning auto magneto plug, 1. Bought 9 gal. gasoline for milker, \$3.15.
22. Working for Personal, 6, 3. Paid: hired man, \$40; grinding oats for horses, \$2.53; horse collar repairs, \$1. Sold: cow for beef, \$25; 2 calves, \$20; 1 doz. eggs, 90¢; 3 roosters, \$5.68; 1 bu. rutabagas, \$1.50; squash, 48¢.
24. Repairing barn, 2; fall plowing Field C, 2, 4. Sold 9125 lb. cabbage, \$35.85; 18,065 lb. cabbage on account, \$45.16.
25. Working for Personal, 5.
26. Getting out manure sleigh, 1; fall plowing Field C, 3, 6. Sold turnips, 75¢ (Garden).
27. Fall plowing Field J, 2, 4.
- 22-29. Trimming cabbage, 15.
- 23-29. Hauling 18,755 lb. cabbage, 13, 26.
29. Fall plowing Field J, 2, 4.
30. Cleaning henhouse, 1; fall plowing Field I, 8, 16.
- During the month:* Hauling milk, 15, 30; hauling 31 loads manure, 24, 48; washing milking machinery, 4.

December

Daily Chores: Horses, 2; dairy, 8; poultry, ½; hogs, ½.

1. Cleaning pen, 1 (Dairy); fall plowing Field I, 5, 10. Sold gasoline from milker, 25¢.
2. Repairing barn doors, 1; working on sulky plow, 2; fall plowing Field C, 6, 12. Bought: 1875 lb. acid phosphate, \$26.36; 100 lb. 1-12-1 fertilizer, \$19.11; 375 lb. 3-8-4 fertilizer, \$10.20 (charge all these to Supplies).
- 1-3. Hauling corn for grain, 2, 4.
3. Fall plowing Field J, 1, 3. Paid hired man, \$6.
4. Fall plowing Field I, 4; 8.
6. Sorting out 38 bu. rotten potatoes, 7; fall plowing Field G, 3, 6;

- fall plowing Field I, 4, 8. Bought: file, 35¢; 12 gal. gasoline for auto @ 34¢, \$4.08.
7. Repairing window lights in barn, 1; fall plowing Field I, 4, 8; fall plowing Field P, 1, 2; fall plowing Field J, 3, 6.
8. Fall plowing Field J, 4½, 9. Bought plowshare, \$1.25. Sold 1 gal. gasoline from milker, 35¢. Charge one hog to Personal, \$30 (credit Hogs).
9. Grinding knives and axes and setting saw, 2. Daily chores for Hogs become 0.
- 1-10. Working for Personal, 15, 5.
12. Paid: hired man, \$3; store bill for hired man, \$36.65; on account, \$80.84.
13. Getting team shod, 3, 6. Paid for horseshoeing, \$5.60. Bought: 1000 lb. gluten for dairy on account, \$27; 500 lb. wheat feed for dairy on account, \$12; 500 lb. cottonseed meal for dairy on account, \$13.75; 560 lb. buckwheat middlings for dairy on account, \$9.24.
15. Cleaning pen for heifers, 2; fall plowing Field J, 4, 8. Bought milker diaphragm, 25¢.
16. Hauling corn for grain, 3, 6; sorting corn for grain, 1.
17. Settling account with Phelps and Sellen, 2 (General Farm). Check for 10,222 lb. November milk, \$425.23.
20. Repairing fence around straw stack, 1 (General Farm).
- 11-21. Work for Personal, 14.
- Oct. 4-Dec. 21. Husking 122½ bu. corn, 44, 1 (Corn for Grain).
22. Settling account with Wilkins, 1 (General Farm); working on horses, 1; working on poultry, 1; hauling corn, 2, 2 (Corn for Grain). Paid: extra labor, \$18.50; hired man, \$91.85; for cutting silage corn, \$20; for cutting oats, \$18; for cutting wheat, \$2.25. Sold: 1½ bu. silage corn seed, \$7.15. Received for outside labor, \$10.50. Bought 3 pails grease, 60¢.
- Dec. 1-Dec. 22, inclusive: Hauling 23 loads manure, 16, 32; washing milking machinery, 3.

Disposal of 1919 Supplies was as follows:

½ T. oat straw to Horses for bedding	\$4.50
2½ T. oat straw to Dairy	25.00
100 lb. mixed feed to Dairy	3.00
50 lb. cottonseed to Dairy	2.00
50 lb. oil meal to Dairy	2.00

400 lb. wheat feed to Dairy	\$10.60
6100 lb. molasses feed to Dairy	112.25
80 lb. ground oats to Dairy	2.60
73 T. silage corn to Dairy	360.00
200 lb. acid phosphate to 1920 Cabbage	2.80
200 lb. nitrate soda to 1920 Cabbage	8.60
200 lb. nitrate soda to Silage Corn	8.60
108 bu. oats, barley, and wheat to Horses	108.00
12 bu. oats, barley, and wheat to Poultry	12.00
15 bu. spring wheat to Poultry	30.00
1 bu. alfalfa seed to 1921 Hay	14.00
1 bu. mixed grass seed to 1921 Hay	20.00
65 bu. ear corn to Horses	48.75
40 bu. ear corn to Hogs	30.00
30 bu. ear corn to Poultry	22.50
5 $\frac{3}{4}$ T. hay to Horses	115.00
32 $\frac{3}{4}$ T. hay to Dairy	655.00
20 bu. potatoes to 1920 Potatoes	30.00
6 $\frac{3}{4}$ bu. potatoes to Personal	10.00

Transfers made during the year were as follows:

250 lb. ground oats from Horses to Dairy	\$5.00
400 lb. ground oats from Horses to Supplies	8.00
100 lb. wheat feed from Dairy to Hogs	3.00
50 lb. Big Repeater from Dairy to Poultry	1.75
150 lb. mixed feed from Dairy to Poultry	4.35
465 lb. buckwheat middlings from Dairy to Supplies	7.67
700 lb. gluten from Dairy to Supplies	18.90
500 lb. wheat feed from Dairy to Supplies	12.00
500 lb. cotton seed meal from Dairy to Supplies	13.75
100 lb. oil meal from Dairy to Supplies	3.80
4500 lb. Big Repeater from Dairy to Supplies	158.40
25 cords stove wood from General Farm to Personal	12.50

Production and Disposal of Crops were as follows:

1919 Cabbage

$\frac{1}{4}$ T. cracked heads to Dairy	\$2.50
Balance to crop shrinkage	

1920 Cabbage

29,800 lb. early cabbage to Dairy	\$119.20
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12,810 lb. late cabbage to Dairy	\$51.24
80,000 lb. late cabbage to Supplies	320.00
<i>1920 Corn for Grain</i>	
30 bu. ear corn to Horses	\$9.00
20 bu. ear corn to Hogs	6.00
8 bu. ear corn to Poultry	3.20
66 bu. ear corn to Supplies	26.40
14 bu. soft ear corn to Supplies	4.20
100 bu. unhusked ear corn to Supplies	35.00
3½ T. corn stalks to Supplies	24.50

Silage Corn

25 T. to Dairy

84 T. to Supplies

See directions regarding closing Silage Corn Account on page 257.

Garden

10 bu. beets to Supplies	\$5.00
43 bu. carrots to Supplies	21.50

1920 Hay

2 T. to Horses	\$40.00
10½ T. to Dairy	210.00
2½ T. swale hay to Supplies	30.00
35 T. hay to Supplies	770.00

1920 Oats

38 bu. oats to Horses	\$22.80
1 bu. oats to Poultry60
335 bu. oats to Supplies	201.00
600 lb. oat straw to Horses	3.60
3400 lb. straw to Dairy	20.40
8000 lb. oat straw to Supplies	48.00

Orchard

15 bu. apples to Personal	\$15.00
1100 lb. cider apples to Personal	4.40

1920 Potatoes

6 bu. to Personal	\$6.00
316 bu. to Supplies	395.00
38 bu. rotted	

LABORATORY WORK IN COST ACCOUNTING

1920 Wheat

32 bu. wheat to Supplies	\$56.00
100 lb. wheat straw to Horses65
500 lb. wheat straw to Dairy	3.25
1400 wheat straw to Supplies	9.10

Credit the following crops and charge Dairy with the use of pasture :

Cabbage	\$10.00
Silage Corn	8.00
Hay	25.00
Oats	12.00
Wheat	3.00

Inventory: December 22, 1920

Land	\$10950.00
Buildings	5050.00
Horses	775.00
General Equipment	679.50
Dairy Equipment	325.00
Dairy	2690.00
Poultry	115.50
Auto	400.00
Supplies	2753.59

Charge Labor with the following additional items :

Value of operator's labor	\$1200.00
Value of unpaid family labor	230.00
Board of hired man, nine months	270.00
Board of operator	360.00
Board of unpaid family labor	90.00

Charge for use of buildings as follows :

Dwelling	\$205.00
Dairy	75.00
Horses	26.00
Supplies	55.00
Poultry	7.00
Equipment	15.00
Auto	5.00
Silage Corn (Silo)	20.00

FARM ACCOUNTING

Allocate the use of land for the various enterprises as follows :

20.6 acres crop land at \$200 per acre	{	8.9 acres to Corn Silage
		.4 acre to Garden
		6.6 acres to Hay
		3.5 acres to Oats
		<u>1.2 acres to Wheat</u>
		20.6
30.8 acres crop land at \$125 per acre	{	5.3 acres to Cabbage
		1.6 acres to Corn for Grain
		17.1 acres to Hay
		5.1 acres to Oats
		<u>1.7 acres to Potatoes</u>
		30.8
.8 acre orchard at \$125 per acre	{	.1 acre to Garden
		.3 acre to Hay
		<u>.4 acre to Orchard</u>
		.8

1.6 acres swale (value, \$67) to Hay

35.1 acres to Pasture
equivalent (home farm)

Charge \$13 to Horses and remain-
der to Cattle.

@ \$40 per acre.

15.5 acres to Pasture
equivalent (other farm)

Charge to Cattle.

@ \$30 per acre.

Credit animals with manure as follows :

Horses 49	T. @ \$1.50	\$73.50
Cattle 164	T. @ 1.50	246.00
Poultry 1½	T. @ 1.50	2.25

The disposal of manure was as follows :

49	T. to Cabbage
4	T. to Corn for Grain
43½	T. to Corn Silage
4	T. to Garden
69	T. to Hay
28	T. to Oats
3	T. to Orchard
6	T. to Potatoes
<u>8</u>	T. to Wheat
214½	T.

All items for the Horse Account have now been listed, and the cost of horse-labor can be computed, as well as the cost of man-labor and equipment-use. In closing the remaining accounts, the following suggestions should be followed:

Divide the total charges in the Manure Account by the number of tons and distribute manure costs at the figure determined to the various crops as listed above.

Compute the cost of lime in the same way. It was estimated that the crops should be charged with the following amounts of lime:

1941 lb. to Cabbage
492 lb. to Corn for Grain
740 lb. to Silage Corn
92 lb. to Garden
6060 lb. to Hay
4758 lb. to Oats
432 lb. to Potatoes
585 lb. to Wheat
900 lb. not applied (charge to Supplies; this is included in the 1920 Inventory of Supplies).

Charge interest to the various enterprises as follows:

Horses, 6% on \$650.

Equipment, 6% on \$625.

Corn Silage, 6% on \$175 for 6 months.

Buildings, 6% on \$5050.

Land, 6% on \$10,050.

Hogs, 6% on \$25 for 6 months.

Supplies, 6% on \$1200.

Dairy, 6% on \$2200.

Poultry, 6% on \$95.

Dairy Equipment, 6% on \$395.

1919 Cabbage, 6% on \$300 for 1½ months.

1920 Cabbage, 6% on \$250 for 6 months.

Corn for Grain, 6% on \$75 for 6 months.

Hay, 6% on \$75.

Oats, 6% on \$200 for 6 months.

Potatoes, 6% on \$100 for 6 months.

Wheat, 6% on \$40 for 6 months.

Auto, 6% on \$450.

Close the Silage Corn Account at cost, and distribute according to the list above. Any small balance in these three accounts (Lime, Manure, Corn Silage) may be charged to General Farm.

Close the Auto Account by charging 70% of the costs to Personal and 30% to General Farm.

The General Farm Account is comparatively small and for simplicity may be closed by charging balance directly to Loss and Gain instead of distributing as overhead charges.

The remaining accounts may be closed in the usual manner.

INDEX

(References are to pages)

- Accounts, arranging, 165; closing, 121; detailed analysis of, 179-182; form of, 78, 79; general analysis of, 172-179; household, 112; minor, 110; special, 111; steps in keeping, 165-169; suspense, 113; to be kept (what), 76, 114, 115; with individuals and firms, 64
- Accounts of, cash renter, 187; share-cash renter, 187; share renter, 186
- Accounts with, beef and dairy herd, 184, 185; buildings, 104; cash, 111, 112; dairy, 89; double crop, 183-185; equipment, 98, 99; garden, 181, 182; general farm, 106; interest, 108; intermediate products, 115; inventory, 108, 109; labor, 94-96; land, 104, 105; loss and gain, 113; marketing, 187, 188; personal, 107; supplies, 100, 101; work animals, 96, 97
- Accrual basis for computing taxable income, 66
- Adjusting values of real estate, 15, 58, 59
- Analysis of farm accounts, 172-182
- Animals, listed in groups in inventory, 5, 26; listed separately, 5, 24; form of labor records for, 82, 83
- Areas of fields, 74
- Beef and dairy account (mixed herd), 184, 185
- Blank forms, 201-205
- Buildings, account with, 104; depreciation of, 14; inventory lists of, 6; labor record for, 85; valuing, 14, 15
- Butter fat record, 197
- Butter used by family, 200
- By-products, charge for, 116, 117
- Capacity of silos, 11
- Capital, farm, 58
- Cash, account with, 111, 112
- Cash receipts and disbursement, basis for computing taxable income, 67-70
- Cash renter, 187
- Cattle, depreciation of, 17; inventory lists of, 24; valuing, 16, 17
- Charge for by-products, 116, 117
- Charge for intermediate products, 116
- Corn, account with, 179-181; measuring, 10
- Cost accounting, 2, 73-205; purposes of, 2, 73
- Cost accounts, complete set, 122, 164; steps in keeping, 165-169
- Cost, elements which constitute, 76, 77, 188, 189
- Dairy, account with, 89
- Depreciation of, buildings, 14; cattle, 17; horses, 18, 19; implements, 20; land, 23
- Detailed analysis of accounts, 179-182
- Distribution of labor, 162-164, 175-179
- Double crops, account with, 183-185
- Double-entry bookkeeping, 194
- Egg record, 198, 199
- Eggs used by family, 200
- Equipment, account with, 98, 99; valuing, for inventory, 20
- Exercises, 7, 13, 25, 27, 29, 40, 48-57, 63, 68, 70, 71, 79, 81, 83, 84, 87, 88, 91
- Expenses, farm, 16; form for listing, 46, 47

- Farm accounting, importance of, 3; time required for, 3
 Farm animals, accounts with, 89; labor record for, 82, 83
 Farm business, measures of, 60, 61
 Farm capital, 58
 Farm expenses, 46, form for listing, 46, 47
 Farm income (profits), 1, 43, 170, 171; taxable, 170, 171
 Farm inventories, 4-33; direction for taking, 32, 33; value of, 8; what should be included in, 32
 Farm machinery, inventory lists of, 4, 28
 Farm management, 2, 73, 172-182
 Farm map, 74, 75
 Farm products used by family, 59, 62
 Farm receipts, 44; form for entering, 44, 45
 Farm values, 16
 Farming as a business, 1
 Federal Income Tax, 65-70
 Feed records, 89, 90
 Financial accounts, 42-72
 Financial statement, 38, 39

 General analysis of farm accounts, 172-179
 General farm, account with, 106; labor record for, 85
 Grain, measuring, 10

 Hay, measuring, 10
 Horses, account with, 96, 97; valuing, 18, 19
 Household, accounts, 112; inventory, 23

 Implements, account with, 98, 99; valuing, for inventory, 20
 Income, meaning of, 170, 171
 Income statement, 60
 Income Tax (Federal), 65-70; accrual basis for computing, 66; cash receipts and disbursement, basis for computing, 67-70; schedules, 66, 69
 Interest, 120, 189-194; account with, 108

 Intermediate products, account with, 115; charge for, 116
 Inventories, 1-37; account with, 108, 109; value of, 8
 Inventory, lists of, buildings, 6; live stock, 5, 24, 25, 26; machinery, 4, 28, 29; real estate, 6, 32; seasonal work, 31; supplies, 6, 27; tools, 30
 Inventory summary, 33

 Joint operations, 119

 Laboratory work, material for, 34-37, 48-53, 53-57, 87, 88, 91-94, 96, 97, 99, 102, 103, 105, 106, 206-284
 Labor, account with, 94-96; income, 171
 Labor, distribution of, 162-164, 175-179
 Labor earnings, 171
 Labor records, 80-86
 Labor records for, buildings, 85; farm animals, 82, 83; general farm, 85; grains, 80, 81; land, 85; personal, 85, 86
 Land, account with, 104, 105; adjusting values of, 15, 58, 59; change of values of, 58; depreciation of, 23; inventory lists of, 6
 Loss and gain account, 113

 Machinery, account with, 98, 99; inventory lists of, 4, 28
 Manure, record of, 158; valuing for inventory, 22
 Map of farm, 74, 75
 Marketing, account with, 187, 188
 Measures of farm business, 60, 61
 Measuring farm products, 10, 11
 Milk records, 195-197
 Milk used by family, 200

 Operations in a farm enterprise, 80
 Orchard, account with, 185, 186; changes in value of, 59; inventory value of, 23

 Personal, account with, 107; labor record for, 85, 86

- Potatoes, measuring, 10
- Profits, 15, 19, 21, 40, 62, 87
- Purposes of farm accounting, 1, 3, 73, 172-182
- Real estate, adjusting values of, 15, 58, 59; inventory lists of, 6, 32; valuing, 14, 15
- Receipts, farm, 44; form for listing, 44, 45
- Records, butter fat, 197, eggs, 198, 199; feed, 89, 90; labor, 80-86; milk, 195-197; sales, 90, 91; seasonal work, 118, 119
- Renter, accounts of, 186; cash, 187; share-cash, 187
- Sales records, 90, 91
- Seasonal work, records, 118, 119; inventory lists of, 31; inventory values of, 21
- Share-cash renter, accounts of, 187
- Share renter, accounts of, 186
- Sight work, 12, 19
- Silage, measuring, 10, 11
- Silos, capacity of, 11
- Special accounts, 111
- Standing timber, inventory value of, 23, 59
- Straw, measuring, 10
- Summary of inventory, 33
- Supplies, account with, 100, 101; inventory lists of, 6, 27; valuing, 21
- Suspense accounts, 113
- Taxable income, 65-70, 170, 171
- Taxes to be charged to an account, 117
- Tools, inventory lists of, 30
- Topics for study and discussion, 3, 9, 40, 41, 42, 45, 47, 57, 65, 66, 68, 71, 72, 79, 84, 86, 87, 101
- Trial balance, 195
- Unit-equipment method, 98, 99
- Value of farm products used by family, 59
- Value of land, changes in, 58
- Valuing, cattle, 16, 17; farm machinery, 20; horses, 18, 19; real estate, 14, 15, 58, 59
- Warren, G. F., 22
- Work animals, account with, 96, 97

